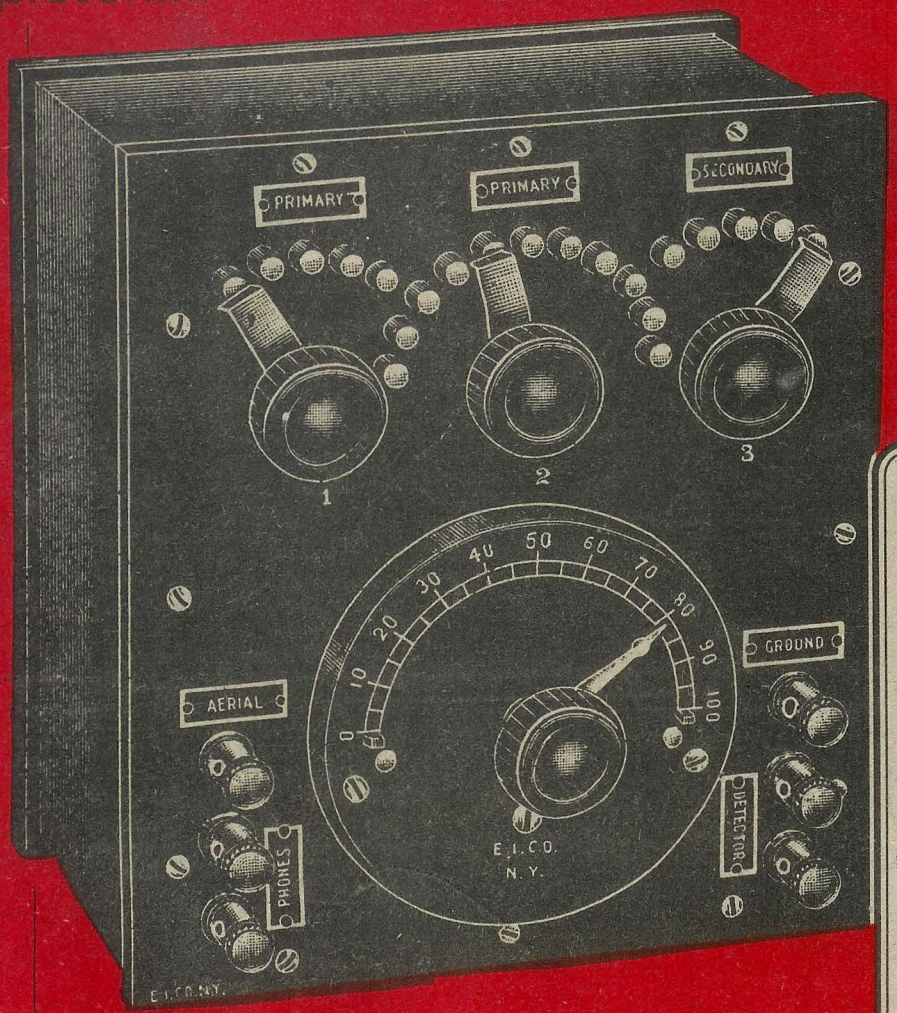
No. 501 — Fall 1985 — $1.00

Lindsay's

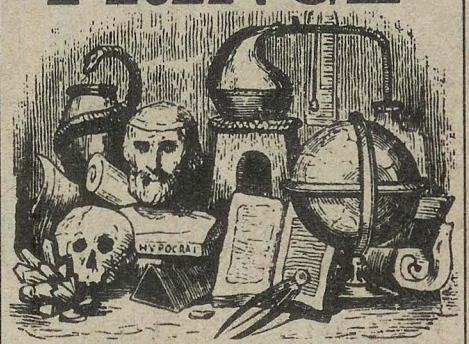
ELECTRICAL BOOKS

Unusual, high quality electrical and electronics books from the past and present...



including

"FRINGE"



Science

Explore the strange world between science and science fiction...

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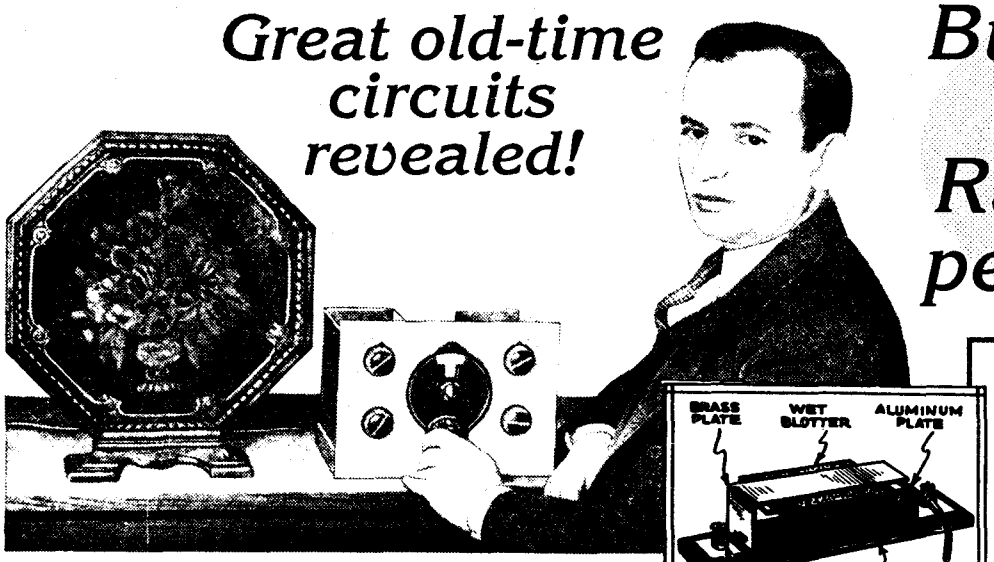
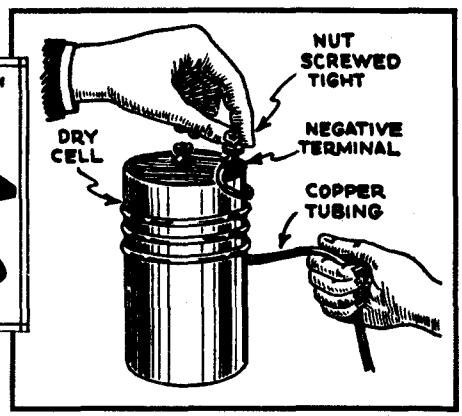
Official 1934 SHORT WAVE Radio Manual

Great old-time circuits revealed!

Build Simple Shortwave Radios! High performance!





Official 1934
SHORT WAVE RADIO MANUAL
edited by Hugo Gernsback & H W Secor
new chapter by T. J. Lindsay

Build simple, high-performance old time shortwaver radios! You can. All of the secrets are here: the circuit diagrams, parts layout, coil specifications, construction details, operation hints, and much more.

Back in the 20's and 30's the only low-cost way of listening in on the newly discovered and fascinating shortwave radio frequencies was to build a set. Shortwave construction magazines flourished, even during the depression.

This is a compilation of construction articles from "Short Wave Craft" magazine. It's wall-to-wall how-to.

At the rear of the book are circuit diagrams, photographs, and design secrets of all shortwave receivers being manufactured in 1934 including some of the most famous: SW-3, the SW-5 "Thrill Box", the deForest KR-1, the Hammurland "Comet Pro", and many more.

You'll find that all the circuits use tubes since transistors hadn't yet been invented. And you'll also find that the original tubes listed are usually difficult to find today. To solve this problem, I've added a new chapter that will show you how to use transistors to replace hard-to-find tubes. That means you can experiment with most of the old-time circuits using modern solid state devices that are low cost, easy to find, and easy to power.

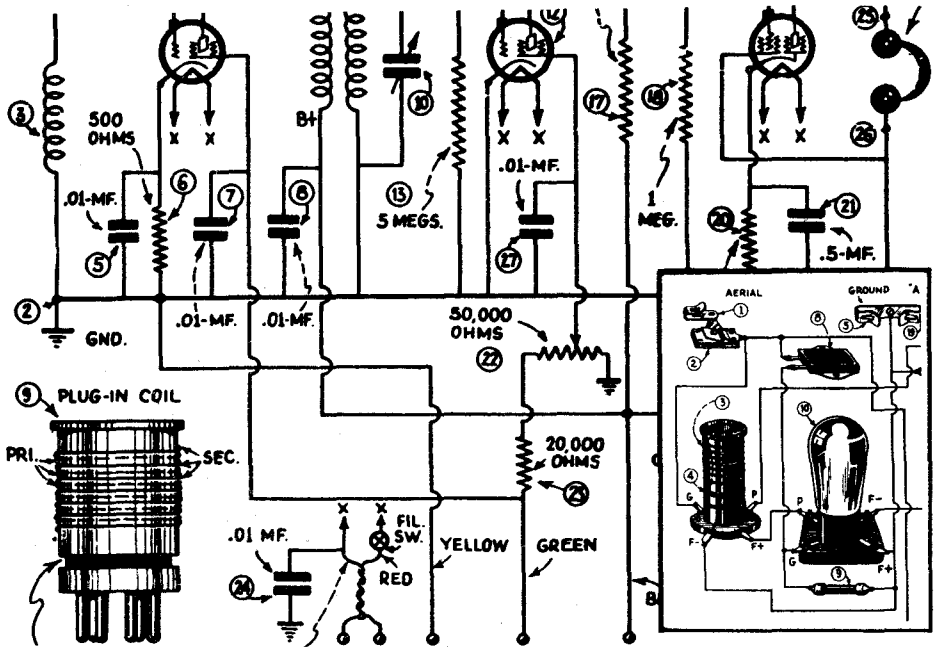
I'll show you the circuit that I lashed together on a table top one night in about 5 minutes using junk box parts, one of my wife's hair curlers and alligator clips. When I hooked it up to an antenna strung across the basement ceiling and attached a 9 volt battery, signals started popping in like crazy. In a couple of minutes I heard an urgent message from a ship's captain off Seattle asking for a navigator to help him through shallow water. Not bad, considering I live near Chicago!

These small regenerative receivers are extremely simple, but do they ever perform! I've built dozens of them, and they never fail to amaze me! Even master machinist, Dave Gingery has built these sets.

This is the nuts for the experimenter, the survivalist who is concerned about basic communication, shortwave listeners, ham radio operators who collect old receivers, and just about anyone interested in old-time radio.

Great book. Best old-time radio book I've ever seen. And I look at every one I can get my hands on. Consider it carefully. Even if you never build one of these radios, you'll get hours of enjoyable reading out of this book. Top rate.

Order a copy. 8 1/2 x 11 paperback 260 pages
Cat. no. 4643 $14.95



LINDSAY PUBLICATIONS INC, PO Box 12, Bradley IL 60915-0012 • 815/468-3668

Shortwave Beginner's Book

SHORTWAVE BEGINNER'S BOOK
by Radio & Television Magazine
reprinted by Lindsay Publications

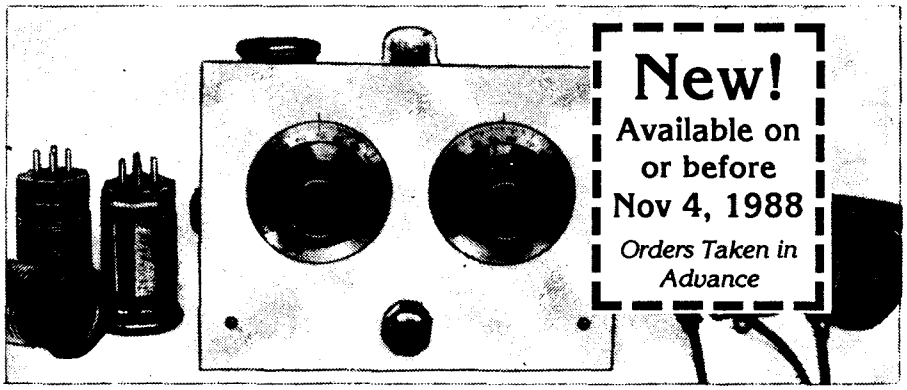
The full title is *"Short Wave Beginner's Book including a complete course of instruction in shortwave; details for making shortwave aerials; a complete beginner's set; coil winding data; operating kinks."* And it's 36 pages of dynamite ideas from 1940.

Short Wave Beginner's Book was targeted for the raw beginner. It explains everything in detail, showing the reader not only the schematic but diagrams of what wire to hook where. Even templates are provided for drilling the chassis. Very little is left to the imagination.

True, the sets are not overly sophisticated, but they're a great place to start. For instance the beginner's set uses a single 30 vacuum tube with a 45 volt B battery. In the next chapter another 30 tube is added as an audio amplifier.

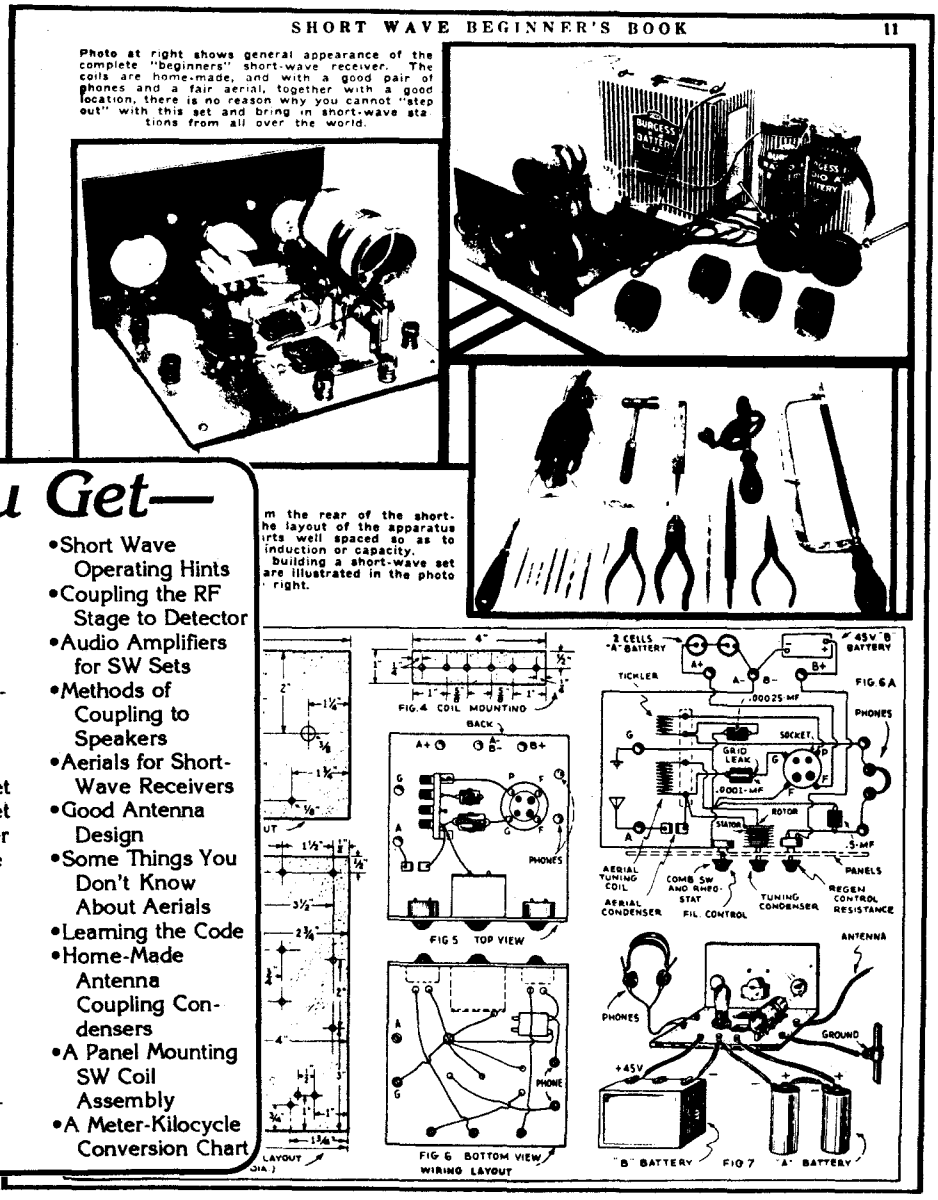
You get excellent discussions on topics such as coupling amplifier circuits, insulators that can be used on shortwave antennas, and code practice oscillators. And everything is nicely illustrated.

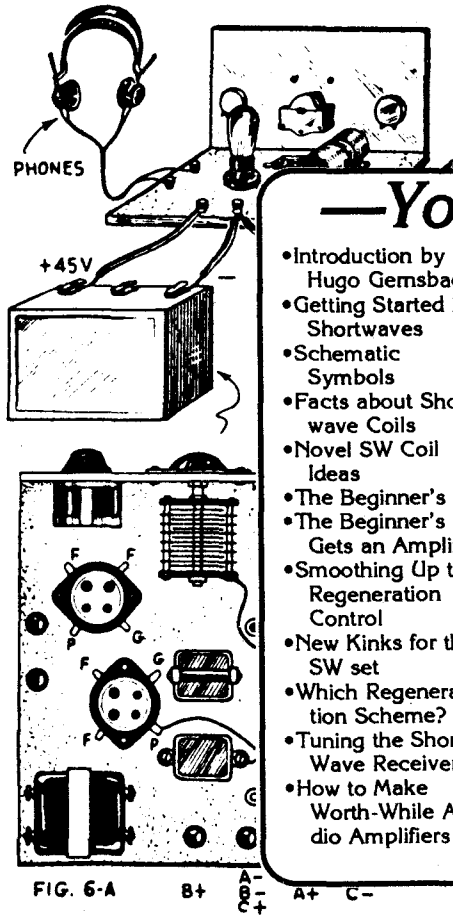
Here's another fun old-time shortwave radio book you should have. And it's reasonably priced! It's another MUST for your old time radio book collection. Order a copy. 7x9 booklet 36 pages
Cat. no. 4961 $4.95



New!
Available on or before Nov 4, 1988
Orders Taken in Advance

Great 1940 Beginner's Book!





—You Get—

- Introduction by Hugo Gernsback
- Getting Started in Shortwaves
- Schematic Symbols
- Facts about Shortwave Coils
- Novel SW Coil Ideas
- The Beginner's Set
- The Beginner's Set Gets an Amplifier
- Smoothing Up the Regeneration Control
- New Kinks for the SW set
- Which Regeneration Scheme?
- Tuning the Short Wave Receiver
- How to Make Worth-While Audio Amplifiers
- Short Wave Operating Hints
- Coupling the RF Stage to Detector
- Audio Amplifiers for SW Sets
- Methods of Coupling to Speakers
- Aerials for Short-Wave Receivers
- Good Antenna Design
- Some Things You Don't Know About Aerials
- Learning the Code
- Home-Made Antenna Coupling Condensers
- A Panel Mounting SW Coil Assembly
- A Meter-Kilocycle Conversion Chart

Amazing "Radio Craft" Magazine from 1938

RADIO CRAFT MAGAZINE
March 1938
edited by Hugo Gernsback

Radio got its start in the 1920's, but it wasn't until the 30's that it made it to the big time. By the late 30's "Radio-Craft" was one of many magazines entertaining and educating radio builders and enthusiasts.

In March 1938 the magazine published a special heavily illustrated edition on radio's first 50 years. And now you can have a complete reprint of that dynamite issue.

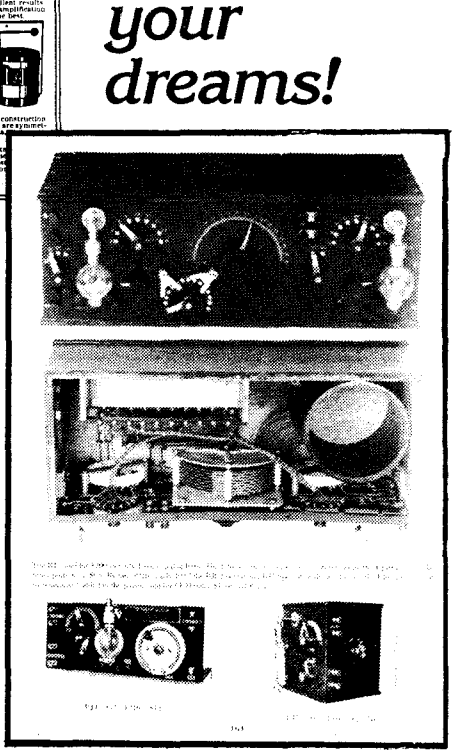
Articles include progress of radio receivers, reminiscences of old-timers, story of amateur radio, radio parts of yesteryear, mileposts in television, Fleming's valve, old-time radio stations, new tubes for '37-'38, super-regeneration in 1922, when the neutrodyne made its bow, early tube experiments and much, much more.

You get every fascinating article, advertisement and how-to construction tip. Great reading for anyone with even a slight interest in oldtime radio. Excellent book. Fun reading. Order a copy! 8 1/2 x 11 paperback 144 pp
Cat. no. 353 $14.95

Radio of the 1920's!

Incredible new collection of ads, photographs, magazine articles!

Go Back to 1920 & Pick out the radio of your dreams!



RADIO MANUFACTURERS OF THE 1920's
by Alan Douglas

If you love old radio equipment like I do, you'll really enjoy this. This, the first of two volumes, covers apparatus manufactured by A-C Dayton through J. B. Ferguson.

You get a big book of wall-to-wall illustrations of home console radios, crystal sets, regenerative sets sold to receive messages from MacMillian's North Pole expedition in 1925, ads for parts, magazine articles taking you inside radio factories and much more.

This is nostalgia, rather than how-to. But! If you're building old circuits, doing restorations, or just want to build a radio that looks old, you'll find more ideas than you can ever use. You'll like this "time machine" back to the 1920's when radio was taking off.

As an old radio buff, I wish I had published this. I think you'll like it, too. 8 1/2 x 11 paperback 225 pages
Cat. no. 356 $19.95

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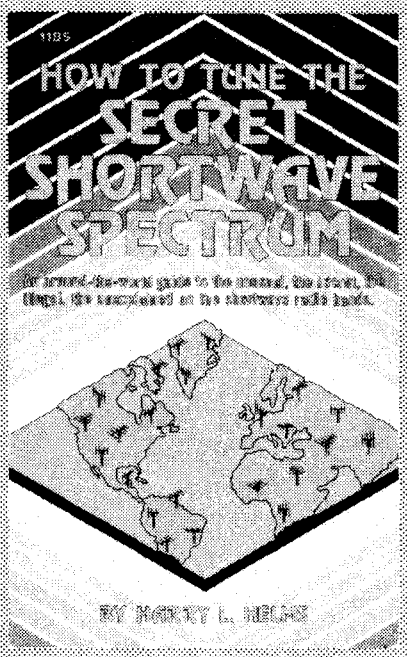
Secret Shortwave Spectrum



How to Tune the SECRET SHORTWAVE SPECTRUM
by Harry L Helms

You'll hear many strange signals when you roll your shortwave receiver through unexplored wavelengths. Many signals will forever remain a mystery. But some have been explained in this unusual volume.

Chapters include clandestine broadcasting, espionage radio activity, government and military, space communication, illegal activity, pirate broadcasting, unknown and unidentified, and more.

Once you know what you're looking for you'll hear mysterious stations broadcasting coded messages to spies, mysterious beacons, maybe even the Secret Service, or the Air Force executing practice bombing runs.

There's much to hear. And this book will help get you started. If you're new to shortwave, you'll find this book very informative. 5 1/2 x 8 1/2 paperback 182 pages
Cat. no. 331 $10.95

"Most book aren't good enough for this catalog. I turn down more books than I Lindsay accept."

12 Shortwave Receivers from Hammarlund!

Great 1937 Plan Book!

HAMMARLUND SHORT WAVE MANUAL
Third Edition
reprinted by Lindsay Publications Inc

For only ten cents you could by this 32 page booklet and choose which of the twelve different shortwave radios you wanted to build. These were the depression years, and Hammarlund, one of the most reputable manufacturer of radio parts, was eager to sell you what you needed to build a low-cost receiver.

You'll like this! The plans offer interesting detailed text that makes construction easy along with the basic schematic diagram, a parts connection diagram, tube pin layouts, coil charts and lots of photographs. I haven't seen any plans better done than these!

You get—
- A Boy Scout's S.W. Receiver
- ARRL Ham Receiver
- The Argonaut
- The AC-DC 2 Tube S.W. Receiver
- Doerle 2-Tube Receiver
- The Dragnet
- The Gainer
- The Pentaflex
- A Power Pack for S.W. Receivers
- Radio Amateur's Handbook 3-Tube Band Spread AC set
- The Ray Five Meter Set
- The Skyscraper
- A Three Tube S.W. Pentode Receiver

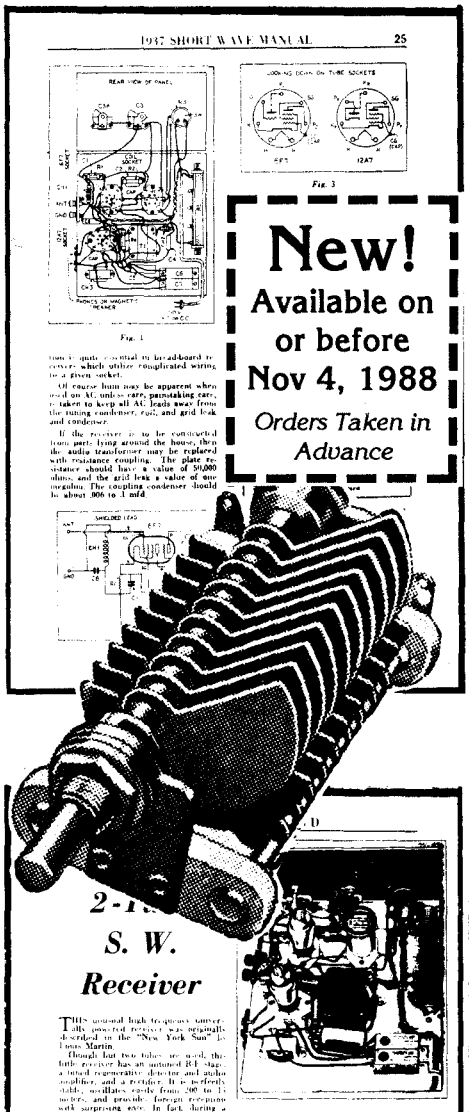
This is great stuff! For instance the "AC-DC 2-Tube SW Receiver" uses two double tubes, a 6F7 as an untuned RF amplifier and a tuned regenerative detector, and a 12A7 as audio amplifier and rectifier. The circuit is surprisingly simple, and yet I'm sure it performs very well!

The "Pentaflex" uses a single 6A7 pentagrid converter tube as a regenerative detector and as an audio amplifier. This could be fun to build.

And the "Ray Five Meter Set" is a three tube super-regenerative set for the then-experimental band of 5 meters (about 60 mHz). Back then a five meter set was a marvel!

And there are nine other circuits plus a battery eliminator project.

This is fun reading and a great source of construction ideas. Get a copy of this. The price is reasonable and the content is super. Order a copy today. You'll enjoy it. 5 1/2 x 8 1/2 booklet 32 pages
Cat. no. 4937 $4.95



New!
Available on or before Nov 4, 1988
Orders Taken in Advance

COLLECT ANTIQUE RADIOS!

Restoration & Price Guide

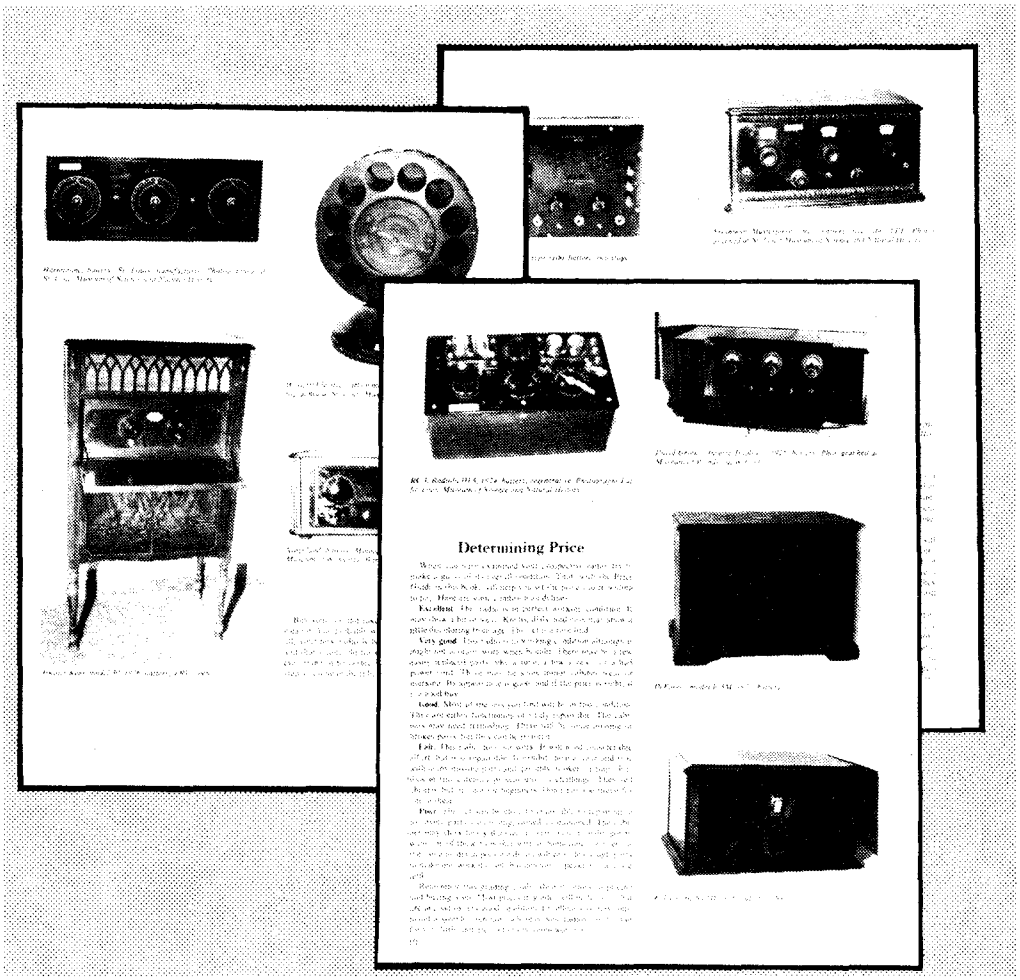
ANTIQUE RADIOS
Restoration & Price Guide
by David & Betty Johnson

People are finally discovering old radios, whether they be the early TRF models that ran off auto batteries, later floor models with shortwave bands, or the new plastic case radios of the 1950's. Interesting is booming.

If you've got the bug to collect old radios, consider this helpful book carefully. Chapters include: is that antique radio right for you?, how does a radio work?, cleaning it inside and out, examining it, trying out your radio, troubleshooting and repairing, fine-tuning your radio, cabinet repair and refinishing, receiver theory, equipment and supplies, tube information, parts & diagrams sources, information sources, price guide, and glossary.

You get lots of photos of rare and not-so-rare radios, diagrams, drawings, hints and tips, and loads of valuable information for the beginning collector. Because this is a 1982 edition, the prices listed in the rear are understandably low, but will nonetheless, give you a relative idea of just how valuable your old radio might be.

Interesting book. Fun reading. I wish it were three times bigger than it is! Think about ordering a copy.
8 1/2 x 11 paperback 100 pages
Cat. no. 361 $10.95

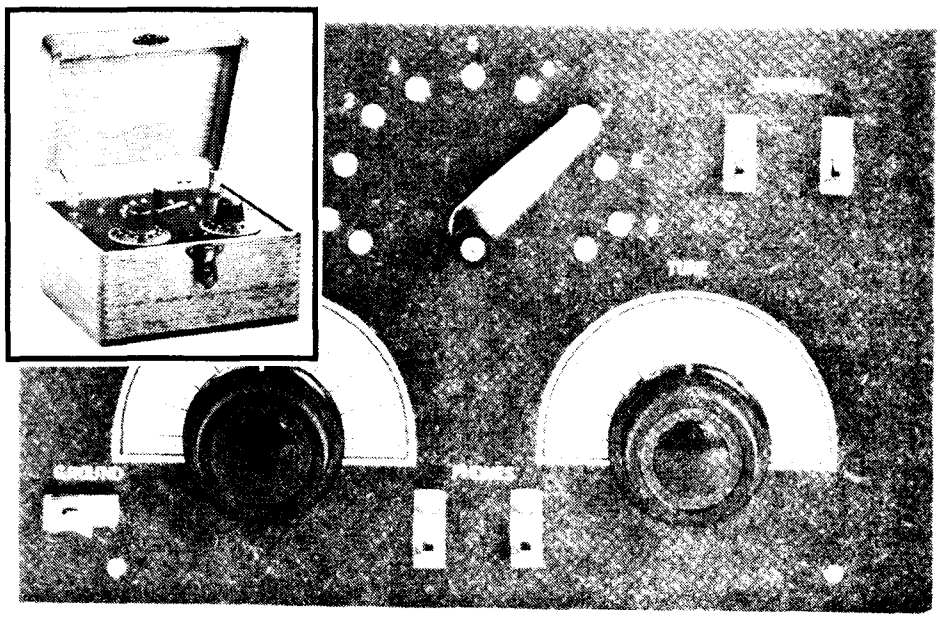


Radios That Work For Free!

Build a High Performance Crystal Set!

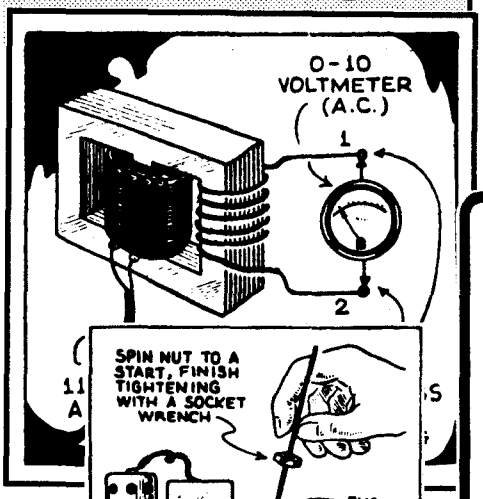
RADIOS THAT WORK FOR FREE
by K.E. Edwards

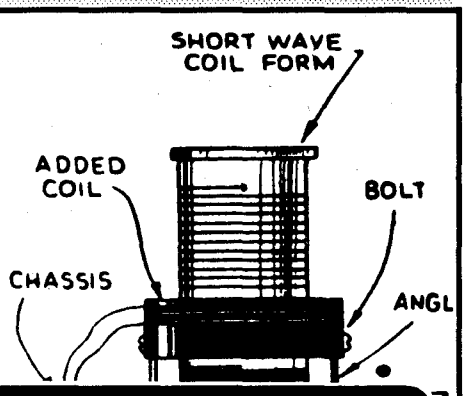
Build yourself a crystal set! You'll be shown everything you need to know - from materials to tools to techniques. Edwards will show you how to build "hot-rod" crystal sets with fancy features that can outperform the old oatmeal box versions, but are still simple. If you've never built anything electronic at any time but would like to try, this is a great place to start. This book has become a classic in its field, and it gives me a good feeling. I think you'll like it, too. 5 1/2 x 8 1/2 paperback 138 pages — well illustrated
Cat. No. 314 $7.95



Short Wave Radio QUIZ BOOK AND KINKS

Fantastic 1938 Collection of Hints & Tips





You Get

- SW Receivers for 110 VAC Operation
- AC-DC Receivers
- Battery Type SW Receivers
- Short-Wave Antennas
- Antenna Hints
- Short-Wave Converters
- Pre-Amplifiers
- Miscellaneous SW Hints
- Beat Oscillators
- Power Supplies
- Audio Amplifiers
- A Folded Doublet to Save Space
- How to Get Best DX
- Simple 1-Tube Booster
- A Twin Pentode Receiver for the Beginner
- Kinks for SW "Fan"
- Easy-to-Build Short Wave Transmitters
- Code Practice Oscillators
- 5-Meter Receivers
- "Ham" Kinks

New!
Available on or before Nov 4, 1988
Orders Taken in Advance

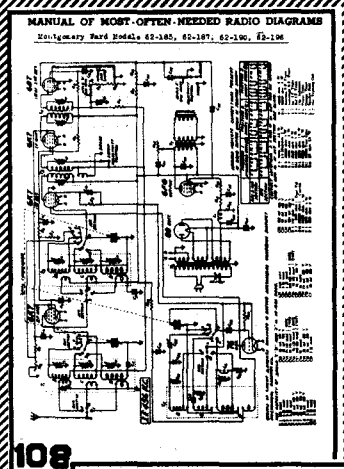
Short Wave Radio QUIZ BOOK AND KINKS
by Short Wave & Television Magazine
reprinted by Lindsay Publications

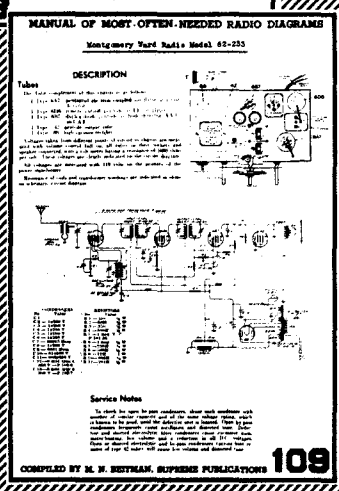
Short Wave & Television Magazine frequently published reader's questions and answers as well as small "fillers" of circuits, hints, tips and kinks. In 1938 a collection of these tiny articles was reissued in this 64 page book.

You'll get tips on winding coils, bending chassis, soldering phone tips, making a lightning arrestor from a spark plug, plans for a rf amplifier, a 2 tube SW set, another for a motorcycle, a 2 tube battery set, a 6.3 volt 3 tuber, and on and on. There are hundreds of hints and kinks here!

You'll wish the stories were longer, but there are so many great ideas (some a little ridiculous) that you won't complain. It's fun reading. I like it, and I think you will, too. Order a copy. 5 1/2 x 8 1/2 paperback 64 pages
Cat. no. 4945 $4.95

Old Radio Diagrams!





Most Often Needed 1926-1938 RADIO DIAGRAMS and Servicing Information
compiled by M. N. Beitman

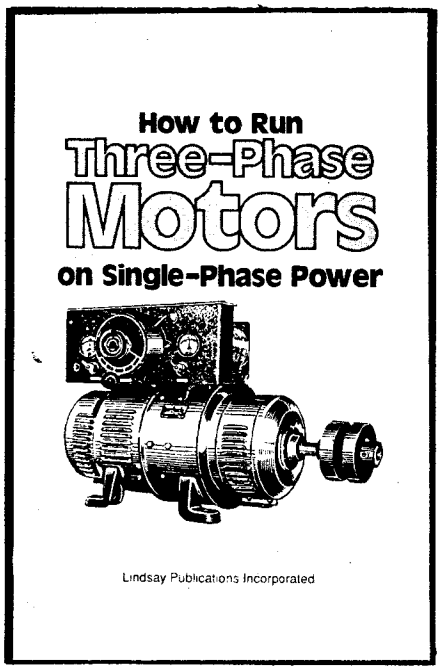
Reprinted from out of the past is this great collection of wiring diagrams and service tips on most of the radios likely to be encountered by a radio serviceman in 1938.

You get not only the circuit diagram but in many cases parts numbers, voltage measurements at critical points, chassis drawings, alignment specs for superheterodynes, and more.

You'll find mostly diagrams for superhets, but there are a few regens from the "old days". Many receivers have shortwave bands. And although I consider myself at least somewhat knowledgeable about old radio technology there are tube numbers used here that I've never even heard of!

If you collect radios or like to build old sets using old parts, this is for you. You'll find everything from Atwater-Kents to Zenith radios listed. A valuable reference. Good stuff. Consider it carefully. 8 1/2 x 11 paperback 240 pages
Cat. no. 362 $11.95

Run Three-Phase Motors on Single Phase



HOW TO RUN THREE PHASE MOTORS ON SINGLE PHASE POWER

Yes! You can run three-phase motors on single-phase power using any one of three excellent methods. First, lathes, drill presses, and other machine tool motors can be run with the capacitor method. Second, the autoformer method (a technique you should buy rather than build) is useful for motors running under continuous full load. And finally you can run a whole shop full of three-phase motors from a single, easy-to-build dynamic converter! No rewinding is necessary. These methods are good to at least 150 hp and 440 volts! Low starting currents and excellent power factor are possible.

Basic three-phase and induction motor theory is included. Complete with drawings, diagrams, and capacitor values.

4 1/2 x 7 booklet 20 pages, 18 illustrations — a BARGAIN!

Cat. No. 81 only $3.00

"I carry only the best books I can find — only those books I'd love to buy..."

Lindsay

RASCO RADIO PARTS CATALOG

RASCO RADIO PARTS CATALOG NO. 18

by Radio Specialty Company Inc

You'll drool all over yourself as you thumb through this 1928 radio parts catalog. You can buy a 5 tube TRF receiver for $21.75 which includes a walnut cabinet but not the 201A vacuum tubes. You may want the "New 1928 Remler DX Infradyne" for the outrageous price of $105.75, but then again, that includes all ten tubes! You'll find many more to choose from.

But more than likely you'll just want to order parts so that you can build your own. You'll see Bruno Unitune Condensers, 3 gang Pilot 500pf variables, UX280 and UY227 tubes, even special lamps for experimental television equipment using the Nipkow scanning discs, and much more! There are honeycomb coils, variometers, audio transformers, vernier dial drives, meters, horn loud speakers, wooden radio cases, bakelite panels, "b" battery eliminators, mica, coil winding machines, bus bar wire, and dozens of tiny radio schematics.

No, you can't really order this stuff. Remember this catalog is from 1928. But you'll sure which you could! If YOU DO try to order, don't write me to complain that your letter came back unanswered! (Believe it or not, people do that!)

This is fun reading for the oldtime radio buff, and guys like you and me who like to build the old circuits. I enjoyed it, and I think you will, too. Get a copy.

5 1/2 x 7 1/2 booklet 144 pages heavily illustrated

Cat. no. 367 $8.95

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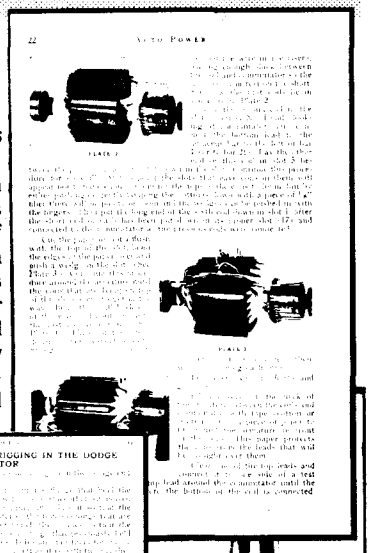
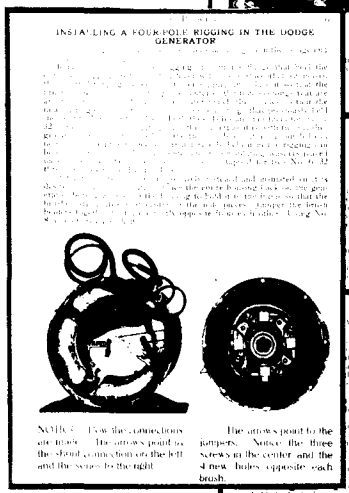
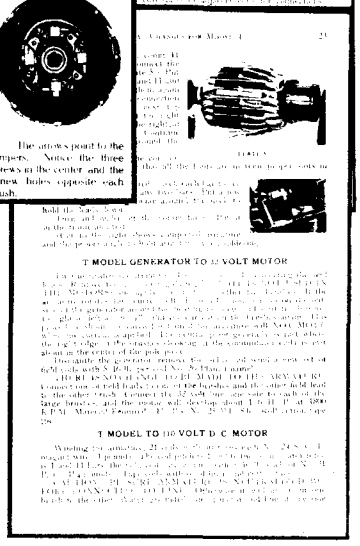
AUTOPOWER

Classic 1935 text on automobile generator conversions & modifications!







AUTOPOWER — Automobile Generator Conversions and Modifications
by S. W. Duncan
reprinted by Lindsay Publications

From out of the Great Depression comes this unusual book on ways to make auto generators produce unusual amounts of power. The major problem with this book is that the generators being rewound are no longer available. Even if you were to find one of the units listed it would now be a hard-to-find part for an antique car. If you were to rewind one of these antique generators, I'd personally drive over and "smack you up 'long side the head!"

If that's the case, then why would I reprint something like this? Simple. The principles taught here can be applied to modern generators, DC motors, starter motors and more. You get detailed, practical how-to that can be adapted to modern needs. In other words, this is raw material for your brain. I can't guarantee your success, but I can guarantee that the info you find here is rare, and that you'll get your money's worth.

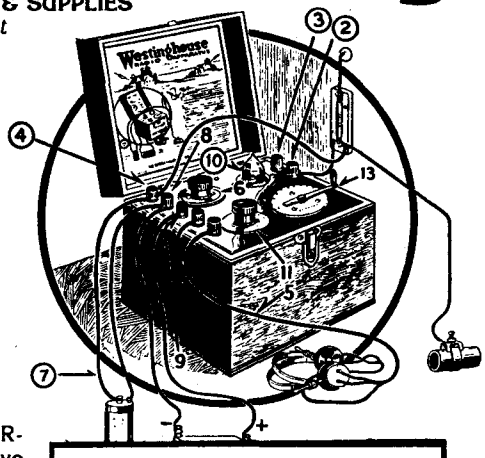
Chapters include changing a Ford Model A generator to a 110 volt alternator, get constant voltage at variable speed, converting a Dodge 12 volt generator into a 110 volt 500 watt alternator, changing a model T to 110 volt AC, making field and armature coils, changing a Delco generator to 110 Volt AC, the winding of automobile armatures, characteristics of DC generators, suggestions on mechanical construction of generators, figuring a new winding for an old frame, converting a farm light plant to 110 volt AC, and a chapter of definitions.

This is a heavily illustrated volume, wall-to-wall how-to.

Get a copy of this. It's great even if it is old. This is one of those manuals that people talk about having seen years ago, but can no longer find. It's worth having a copy just for reference. Order a copy today. 5 1/2 x 8 1/2 paperback 56 pages
Cat. no. 4791 $4.95

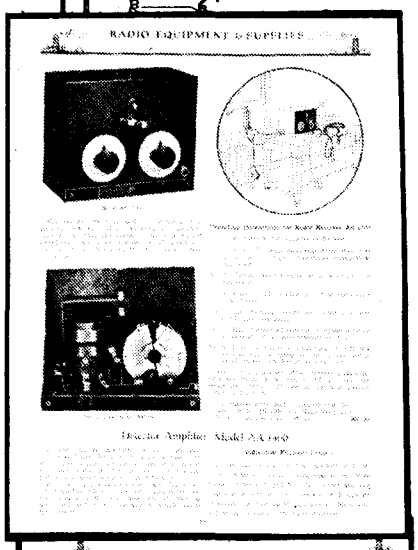
Robertson-Cataract Parts Catalog

RADIO EQUIPMENT & SUPPLIES
by Robertson-Cataract Electric Company



From out of 1922 comes this dynamite radio parts catalog! It's well illustrated (better than most, not as good as some) but it not only lists equipment for sale, it tells you how to use the equipment!

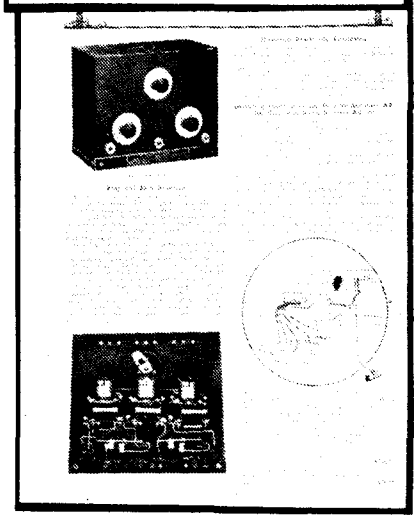
Explore the Aeriola Jr. receiver, the Radiola Number One, Radio Concert model AR-1375, Crystal Receiver AR-1382, the Shortwave Regenerative Receiver Model RA, and a dozen more! Explore their features, how to operate them, erect an antenna, and more!



If you want parts, they're here. You'll find vario-couplers, variometers, tuning inductances, grid leaks, fixed condensers, crystal detectors, loud speakers, knife switches and much, much more.

You'll find several pages devoted to Radiotron UV-200, C-300, UV-201, UV-202 and C-301 vacuum tubes and how to use them. And that's not to mention the WR-21A and WD-11 and others.

If you wanted to build a transmitter back then, you could find rotary choppers, magnetic modulators, microphones, motor-generator sets, and nine different transmitter circuits.



And there's more. You'll find info on radio law, simple receiver circuits, and more.

This is both an old time catalog and a radio course that will entertain and enlighten. You'll have fun with this. No matter how well informed you are, you're sure to learn something new. A great book. Put a copy in your reference library. It's worth having. 8 1/2 x 11 paperback 160 pages well illustrated
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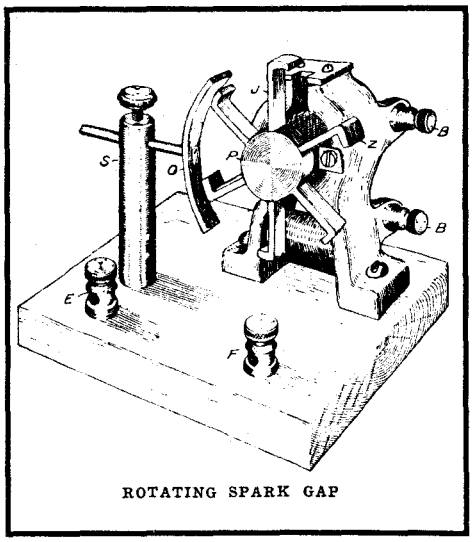
Build High Power Wireless Equipment!

Tesla Equipment, Crystal Detectors, rare radio equipment from 1910-11! Incredible How-To!

New!
Available on or before Nov 4, 1988
Orders Taken in Advance


ROTATING SPARK GAP

CONTENTS:

- Aerials
- Aerial Switch & Induction Coil
- Induction Coil Secondary; Key
- Independent Adjustable Interrupter
- Oscillation Condenser
- Transmitting Helix
- Hot Wire Ammeter
- Two KW Closed Core Transformer
- Two KW Transformer Cont'd
- Detectors
- Detectors Cont'd
- Potentiometer; Fixed Condenser
- Loose Coupled Tuning Coil
- Variable Condenser
- Directions for Operating
- Tesla and His Wireless Age
- Construction of Tesla High-Frequency Apparatus
- High Frequency Apparatus for a Wireless Set
- Hints and Kinks

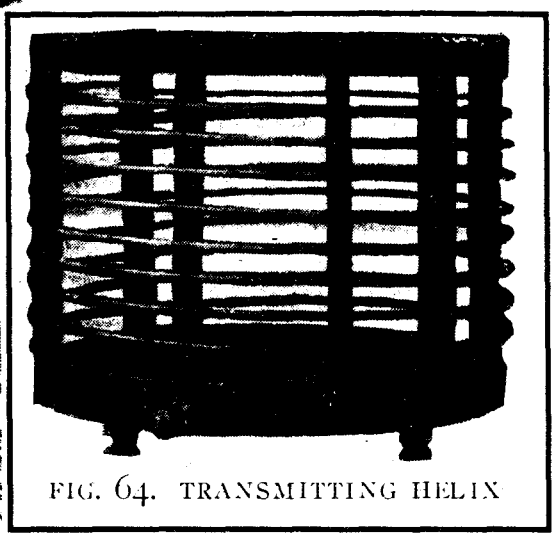


FIG. 64. TRANSMITTING HELIX

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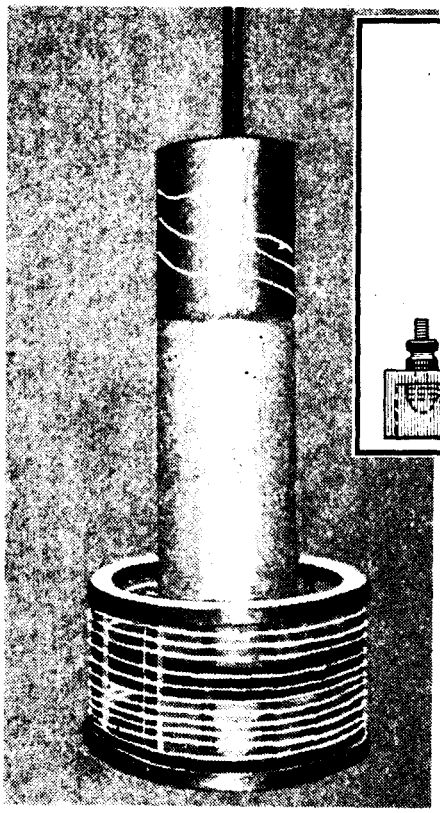

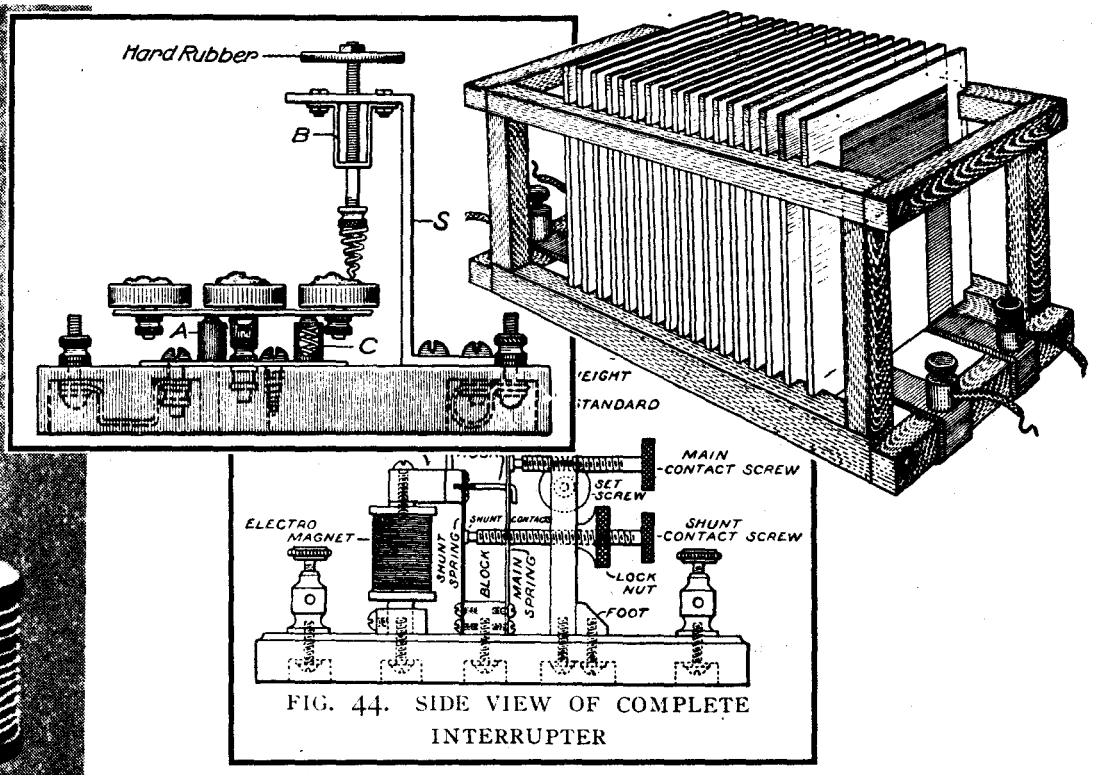

FIG. 44. SIDE VIEW OF COMPLETE INTERRUPTER

HIGH POWER WIRELESS EQUIPMENT

by Alfred Morgan
reprinted from Popular Electricity Magazine 1910-11

If you wanted to try your hand at the newest 1910 electricial craze of transmitting telegraphy without wires, you had to build your equipment. The few pieces of equipment available commercially would probably have been way beyond your pocket book.

Here, in a series of fifteen installments, Alfred Morgan provided his readers with complete, detailed, dimensioned directions for building everything from the key to the aerial, from the induction coil and spark gap, to the helical transmitting coils. As a slice of early radio history this is fascinating reading.

You won't want to build a spark-gap transmitter, they're inefficient and illegal to operate. But you'll find bits and pieces quite valuable. If you build crystal sets, you'll find the detectors very valuable.

If you like to build high voltage equipment, you'll find the induction coil, spark gaps, condenser and other plans useful. Early transmitters were essentially Tesla coils turned off and on with a key. A later chapter actually describes Tesla and the work he did, how to build one of his coils, how to use his equipment in wireless telegraphy.

And you'll find a chapter loaded with hints and kinks on everything from building condensers and using a coherer detector to how enamel wire and make a variometer.

This is all practical hands-on early radio and high-voltage electricity reprinted from the original hard-to-find magazines. Think about the possibilities. It might be fun to build an old wireless station just to show people today how it was done before semiconductors. No matter what your angle or interest is, you'll find this detailed how-to to be fascinating. Excellent rare, early information! Order a copy of this. It's worth having.
5 1/2 x 8 1/2 paperback 99 pages
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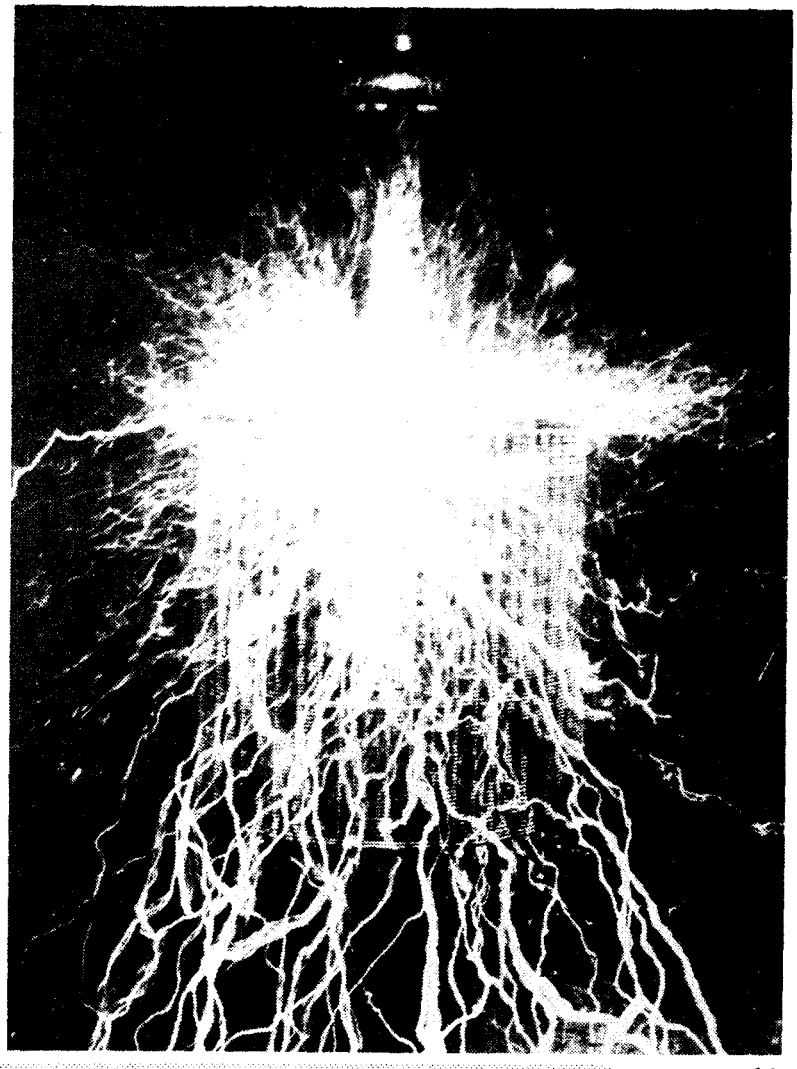
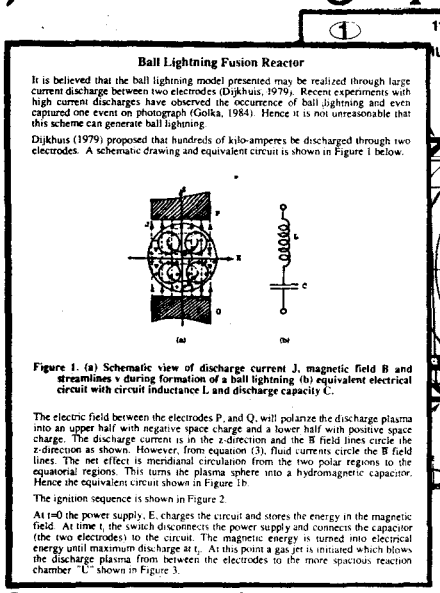
HARDCOVER EDITION — A small portion of the print run has been beautifully hardbound for libraries and collectors.
Cat. no. 4970 $15.95



Tesla Technical Papers

from 1986 Symposium



Ball Lightning Fusion Reactor

It is believed that the ball lightning model presented may be realized through large current discharge between two electrodes (Dijkhuis, 1979). Recent experiments with high current discharges have observed the occurrence of ball lightning and even captured one event on photograph (Golka, 1984). Hence it is not unreasonable that this scheme can generate ball lightning.

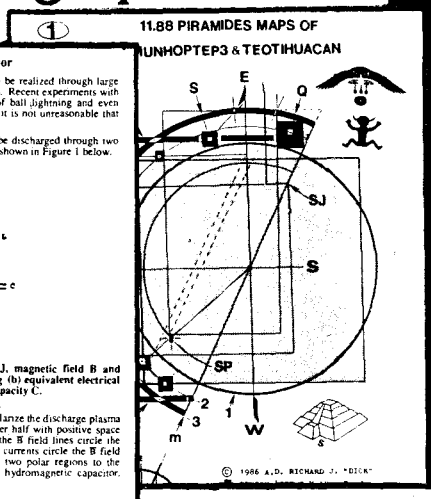
Dijkhuis (1979) proposed that hundreds of kilo-amperes be discharged through two electrodes. A schematic drawing and equivalent circuit is shown in Figure 1 below.

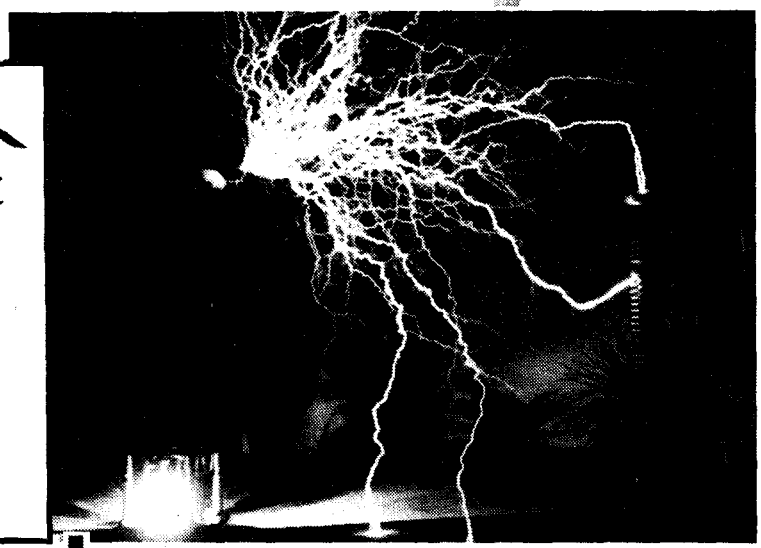
Figure 1. (a) Schematic view of discharge current J, magnetic field B and streamlines v during formation of a ball lightning (b) equivalent electrical circuit with circuit inductance L and discharge capacity C.

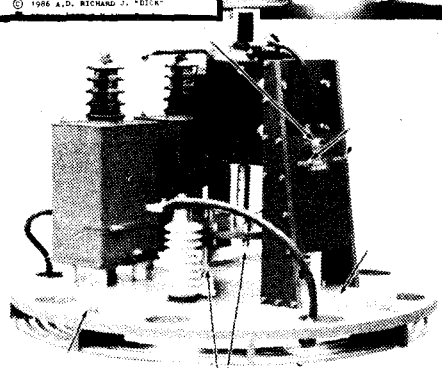
The electric field between the electrodes P, and Q, will polarize the discharge plasma into an upper half with negative space charge and a lower half with positive space charge. The discharge current is in the z-direction and the B field lines circle the z-direction as shown. However, from equation (3), fluid currents circle the B field lines. The net effect is meridianal circulation from the two polar regions to the equatorial regions. This turns the plasma sphere into a hydromagnetic capacitor. Hence the equivalent circuit shown in Figure 1b.

The ignition sequence is shown in Figure 2.

At t=0 the power supply, E, charges the circuit and stores the energy in the magnetic field. At time t_1 the switch disconnects the power supply and connects the capacitor (the two electrodes) to the circuit. The magnetic energy is turned into electrical energy until maximum discharge at t_2. At this point a gas jet is initiated which blows the discharge plasma from between the electrodes to the more spacious reaction chamber "U" shown in Figure 3.







Proceedings of the 1986 INTERNATIONAL TESLA SYMPOSIUM

edited by Steven R. Elswick

In the summer of 1986 the second Tesla Symposium sponsored by the Institute of Electrical and Electronics Engineers was held in Colorado Springs. Many technical papers from the very complex mathematical variety to the very weird were presented to people from all over the world. And although you probably missed the symposium, you can still get a copy of every one of these never-before-seen articles.

You get "Technical Analysis of Extra Coil as a Slow Wave Helical Resonator", "The Tesla Earthquake Oscillator", "The Particle Photon", "The Homopolar Generator", "Z-Ray - A Tesla Alternative to SDI", "The Tesla Design and the Secret of Coil Energy", and thirty-two other papers of varying complexity.

Some of the papers are technically very solid from well-respected engineers. Others are simply "fringe science" such as the world grid theory which the IEEE has been careful not to endorse.

While most of the Tesla literature in print today is old material of questionable quality from years ago, this large, expensive hardcover volume will give you new information, new ideas, and experiments and theories developed during the last few years.

Since these books are leftovers that come from the symposium organizers rather than professional publishers, getting an ample supply may be difficult at times. You may be put on the backorder list, and you may have to wait until we get a new shipment. Dinged up covers are a real possibility. You've been warned. That's a price you'll have to pay for this unusual material. If you're into Tesla, this book you WILL like. 9x12 hardcover over 600 pages

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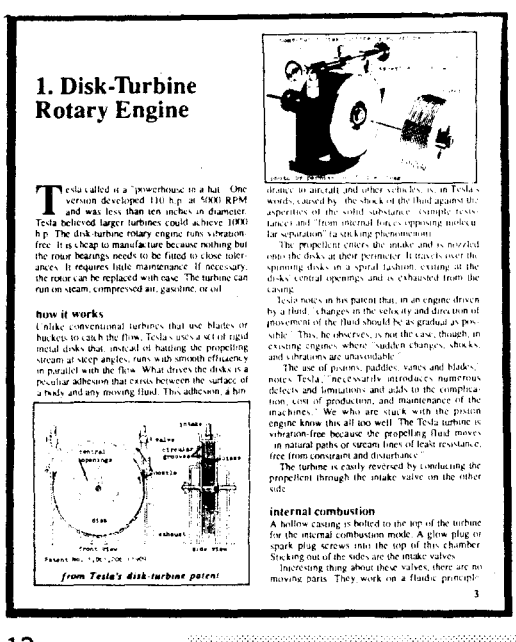


1. Disk-Turbine Rotary Engine

Tesla called it a "powerhouse in a hat." One version developed 110 h.p. at 9000 RPM and was less than ten inches in diameter. Tesla believed larger turbines could achieve 1000 h.p. The disk-turbine rotary engine runs vibration-free. It is cheap to manufacture because nothing but the rotor bearings needs to be fitted to close tolerances. It requires little maintenance. If necessary, the rotor can be replaced with ease. The turbine can run on steam, compressed air, gasoline, or oil.

how it works

Unlike conventional turbines that use blades or buckets to catch the flow, Tesla's uses a set of rigid metal disks that, instead of battling the propelling stream at steep angles, runs with smooth efficiency in parallel with the flow. What drives the disks is a peculiar adhesion that exists between the surface of a body and any moving fluid. This adhesion, a thin

from Tesla's disk-turbine patent

drance to aircraft and other vehicles. As in Tesla's words, caused by "the shock of the fluid against the asperities of the solid substance (simple resistance) and from internal forces opposing molecular separation" (a sticking phenomenon).

The propellent enters the intake and is nozzled onto the disks at their perimeter. It travels over the spinning disks in a spiral fashion, exiting at the disks' central openings and is exhausted from the casing.

Tesla notes in his patent that, in an engine driven by a fluid, changes in the velocity and direction of movement of the fluid should be as gradual as possible. This, he observes, is not the case, though, in existing engines where "sudden changes, shocks, and vibrations are unavoidable."

The use of pistons, paddles, vanes and blades, notes Tesla, "necessarily introduces numerous defects and limitations and adds to the complication, cost of production, and maintenance of the machines." We who are stuck with the piston engine know this all too well. The Tesla turbine is vibration-free because the propelling fluid moves in natural paths of stream lines of least resistance, free from consigrant and disturbance."

The turbine is easily reversed by conducting the propellent through the intake valve on the other side.

internal combustion

A hollow casting is bolted to the top of the turbine for the internal combustion mode. A glow plug or spark plug screws into the top of this chamber. Sticking out of the sides are the intake valves.

Interesting thing about these valves, there are no moving parts. They work on a fluidic principle

3

Tesla's Lost Inventions!

TESLA: The Lost Inventions
by George Trinkaus

"Here are the suppressed inventions of Nikola Tesla all in one place rendered in clear English and in 42 illustrations. Tesla was famous at the turn of the century for inventing the alternating-current system still in use today. But his later inventions, documented in some 30 U.S. patents between 1890 and 1921, have never been utilized as Tesla intended despite their obvious potential for advancing in fundamental ways the technology of modern civilization. Among these lost inventions: the disk-turbine rotary engine, the tesla-coil electric energy magnifier, high-frequency lighting systems, the magnifying transmitter, wireless power, and the free-energy receiver." —from the front cover.

Like Trinkaus's other Tesla book, the only major criticism that can be leveled here is that the chapters are too short. On the other hand, even if each topic were expanded into a full-blown book, you would probably find Tesla so interesting that your curiosity would still not be satisfied.

Interesting, unusual information, especially if you're just beginning your study of Tesla. Fairly priced. 8 1/2 x 7 booklet 34 pages

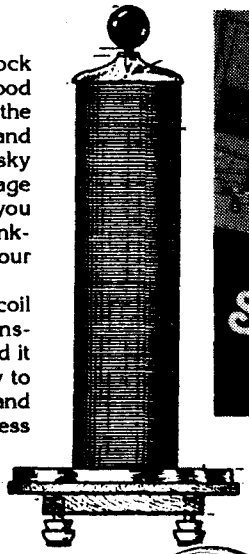
Cat. no. 748 $5.95

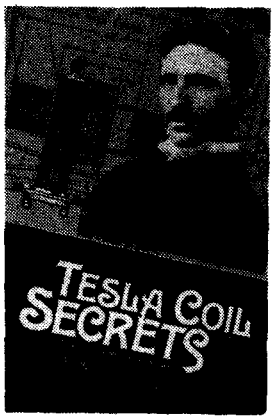
Tesla Coil Secrets!

TESLA COIL SECRETS
by R. A. Ford

Be the first on your block to blast your neighborhood with high voltage! Shock the socks off your friends and relatives! Zap those pesky cats digging in the garbage can! Make people think you really *are* building a Frankenstein monster in your basement!

As you know, a Tesla coil is a high voltage transformer. Nikola Tesla used it at the turn of the century to generate lightning bolts and to investigate the wireless transmission of electrical power.





This fascinating book is not really a how-to-build book. Actually, an avid researcher who has built several coils and has accumulated articles, clippings, notes, and bits-and-pieces over the years has opened up his scrapbooks to us.

You'll see all the interesting hints, plans, and wiring diagrams gleaned from early magazines that ceased publication decades ago along with formulas, notes, and observations he believes are important for building powerful coils. Many of the old articles are so detailed that you can probably use them to build a powerful experimental coil. There are notes on one machine the could kick out five foot lightning bolts!

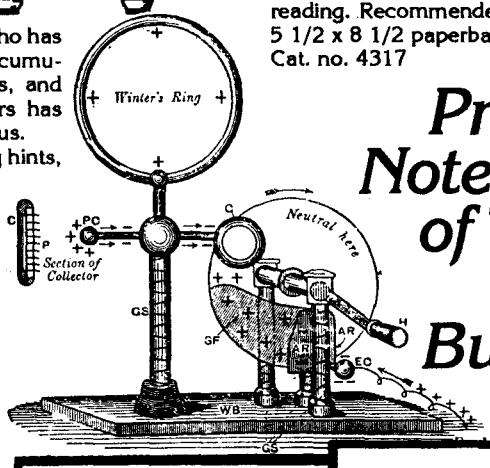
If you're really into Tesla coils, you may have seen a few of these clippings already. But I'll bet there are others you haven't seen. You'll get info on rotary spark gaps, anti-kickback devices, Leyden jar capacitor construction, conical Tesla coils, Oudin coils, and suggestions on research into wireless power transmission, plant growth stimulation, medical uses, and more.

Many of the reprinted articles are fuzzy and a few hard to read. Most have been enlarged to bring out the contruction details, and have been reprinted in their entirety. The difficult searching has been done. You can spend your time building and experimenting.

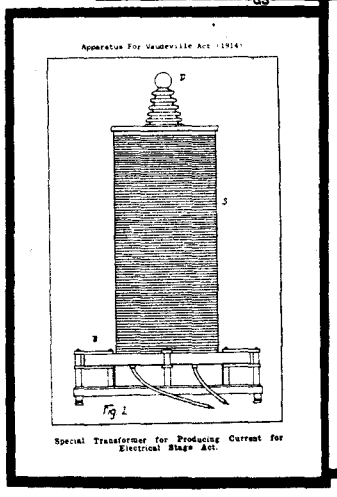
Be warned! You'll be working with high-voltage high-frequency devices from another era. Tesla coils can be very dangerous. But maybe you can be the one to rediscover the secrets Tesla didn't have time to pursue or reveal.

Rare info! Too bad the book isn't ten times bigger. Get a copy for the reference library if for no other reason. Interesting reading. Recommended!

5 1/2 x 8 1/2 paperback 74 pages
Cat. no. 4317 $6.95

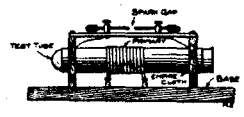


Private Notebook of Tesla Coil Builder



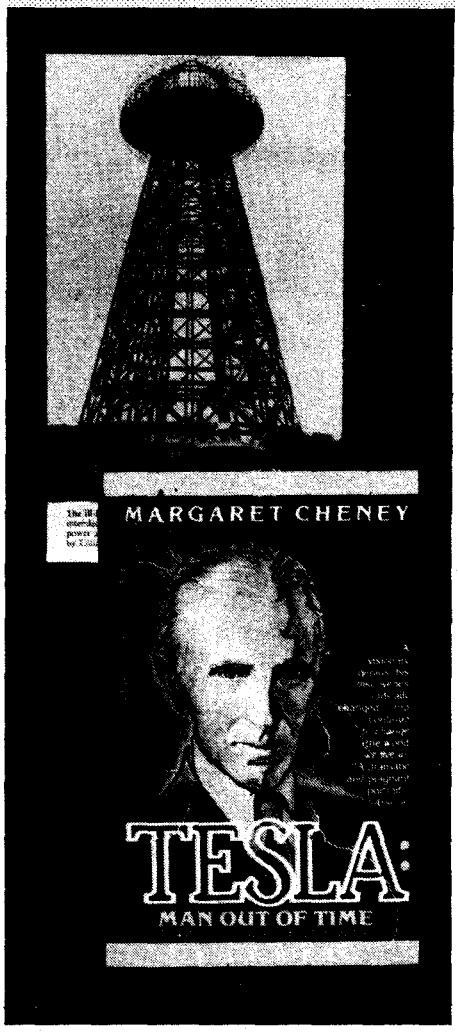
A MINIATURE TESLA COIL.

Most owners of small induction coils have at some time or other wished that a Tesla coil giving results could be built to run on their apparatus. This article describes a Tesla coil made to work with a one-quarter inch spark coil.



Make a base 8x3x⅞ inches, and two uprights two inches square and one-quarter inch thick. Now get a test tube 5¾ inches long, inside diameter three-quarters inch. A cardboard tube of the same dimensions will do. Through each of the uprights drill a hole large enough to let the test tube slip through. Starting one-half inch from the end of the tube, wind on about 135 turns of No. 31 single silk copper wire, spacing the turns 1/32

Who Was Nikola Tesla?



TESLA: MAN OUT OF TIME
by Margaret Cheney

"Flamboyant, eccentric, almost supernaturally gifted, had he been born today he would still be ahead of his time. Called a madman by some, a genius by others, and an enigma by nearly everyone, Nikola Tesla was perhaps the greatest inventor the world has ever known..."

"It was Tesla who harnessed the alternating electrical current that we use today... Tesla who actually invented radio... Tesla who invented fluorescent lighting and the incredible bladeless turbine. He introduced us to the fundamentals of robotry and computer and missile science, which continued to create and transform the future..."

There are many books about Tesla, some of them are garbage written by groupies who worship Tesla as a god. Here's a great factual biography that has gotten great reviews — the story of a wizard who was Edison's enemy, Mark Twain's friend, and J. P. Morgan's client. This is the real story. Excellent book at a reasonable price. Order a copy. 310 pages "mass" paperback a few photos
Cat. no. 717 $4.95

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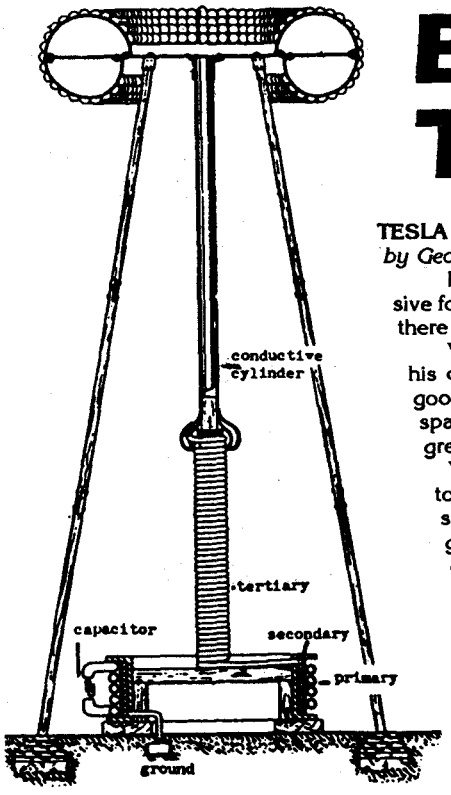
Build a Tesla Coil!



TESLA COIL
by George Trinkaus

Here's another Tesla coil book. It's a bit expensive for what you get, and much of it is a repeat, but there are some bits and pieces that I haven't seen.

You get a brief overview of Tesla, his career and his coil. Then you get instructions on building a good sized coil using a neon transformer and a spark gap to drive the primary. The detail is not great but is probably adequate.

You get brief discussions and details on capacitors, glass-and-foil capacitors, oil capacitors, salt-water capacitors, series and rotary spark gaps, a schematic for a 6L6 vacuum tube driven coil, construction notes, hazards, Tesla lighting, ozone disinfector, and magnifying transmitter. All this in 21 pages!

Obviously, the booklet does not go into great detail, but there are ideas and clues here that you might not have thought of yet that might be worth the price and then some. You'll have to decide. Consider it carefully. 7 x 8 1/2 booklet 21 pages
Cat. no. 741 $4.95

DISCOVER LOST TREASURE!

UNDISCOVERED
The Fascinating World of Undiscovered Places, Graves, Wrecks, and Treasures

by Ian Wilson

If you think all the fabulous treasure has already been discovered and that you'll never have chance to find anything for yourself, think again. There all kinds of tombs, graves, treasure ships, and stashes of gold that have never been discovered.

What ever happened to King John's jewels? Or Bonnie Price Charlie's Army payroll? Or the gold of El Dorado?

Sure, those may be far out, but the ships of Christopher Columbus were sunk in the Caribbean and haven't yet been found. Or a stash of gold buried for safe keeping by Custer's men a few days before their massacre was never recovered.

If Egypt is your thing, there are many kings whose tombs have never been found .... yet. Will you be the one? And the bodies of Mallory and Irvine who attempted to scale Everest before Sir Edmund Hilary have never been found.

This is a fun book regardless of whether you intend to do serious searching or not. You'll learn about events, tragedies, and lost treasure that are rarely discussed these days. Loaded with fascinating photos and maps. A beautifully printed book worth being in your collection. Get a copy and dust off your passport.
6x9 hardcover 192 pages
Cat. no. 745 $16.95

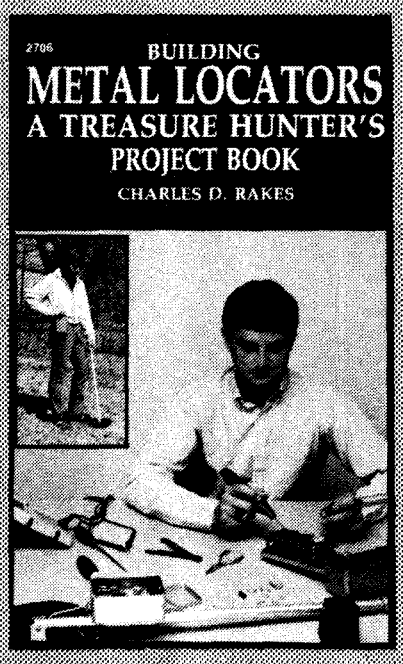
Build a METAL LOCATOR and search for treasure!

BUILDING METAL LOCATORS
A Treasure Hunter's Project Book
by Charles D. Rakes

Metal detectors are fun to play with — profitable, too, if you "shoot" coins. You can locate "treasure", tools that kids drug into the backyard and lost, studs and pipes in the walls, or frisk your mother-in-law to see if she's carrying a handgun when she comes over for Thanksgiving dinner.

BFO metal detectors are neither hard to design nor build. And chapter two will show you how to build one. But it's the plans for all the other high-performance specialized detectors that make this book shine. You'll be shown how to build balance inductance locators, transmitter/receivers, coplanar VLF locator, and some other unusual designs. You even get a chapter on how to begin treasure hunting.

Believe it or not, the circuit board can be the easiest part of a detector to build. Winding coils is usually more difficult, but you will be shown all the secrets and taught all the techniques. If you like to build useful electronic projects, try this! You can build a detector for little money that will perform as well as the high priced models. Interesting book. Rare information. A book worth having. 5 1/2 x 8 1/2 paperback 116 pages
Cat. no. 352 $9.95

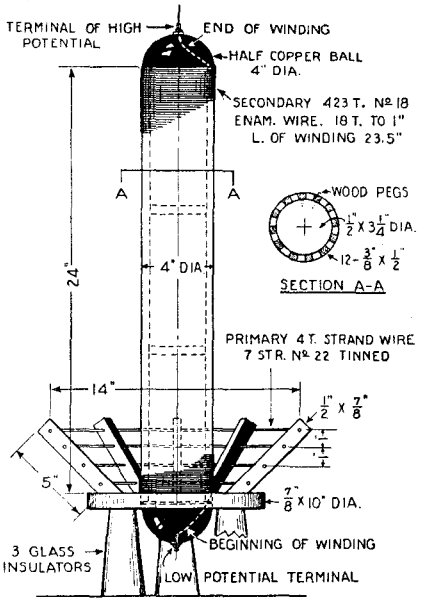


UNUSUAL PROJECTS!

MECHANICS NOTEBOOK 20
Old Magazine Plans
reprinted by Lindsay Publications

Just after the first world war, unusual, often downright strange magazines appeared on the market to take care of the public's hunger for news on inventions and scientific experiments.

After years of searching and many dollars expended, we managed to accumulate a couple of dozen copies of various magazines such as "Everyday Engineering Magazine", "Electrical Experimenter", "Practical Electrics" and "Science and Invention".



Although most of the articles are ridiculously funny because of their inaccurate theory, wrong conclusions, or prediction of bizarre future inventions, there are a few really interesting construction articles that are still useful today. In this oversize notebook you get the winners.

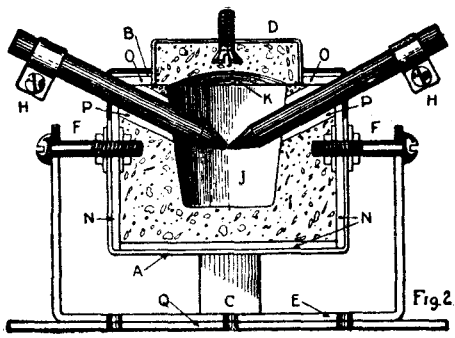


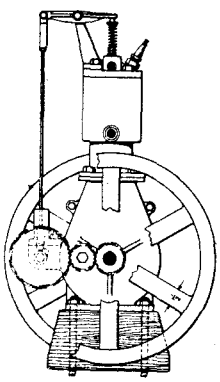
Fig.2

Build a guide that turns a common file into a remarkably good milling machine. Get two different sets of plans for building unusually sensitive laboratory chemical balances. Build a small electric arc furnace with water rheostat capable of reaching temperatures of over 6000° F. Build a small surface grinder having a 6"x6" table.

You get plans for a universal lathe attachment that the author claims is good for surface grinding, indexing, shaping, planing and milling. Build yourself a one-lung one horsepower overhead valve gas engine from scratch.

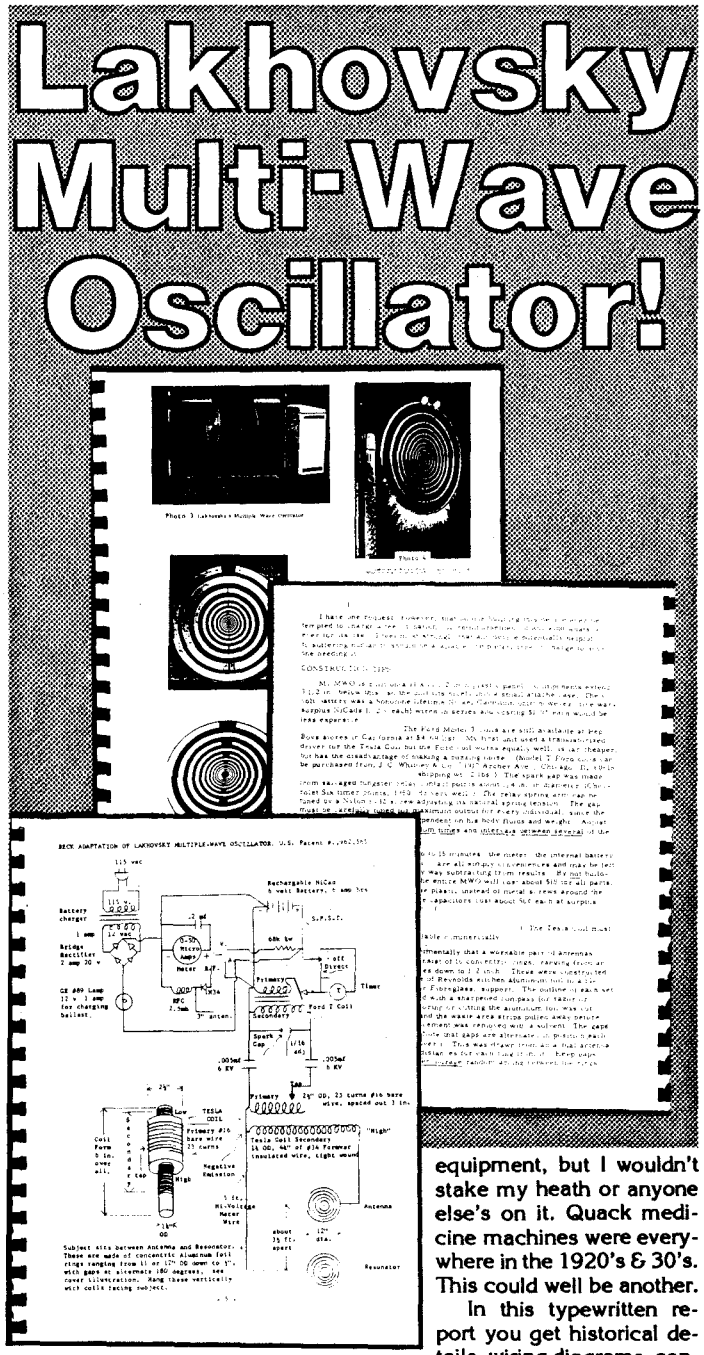
And you get plans for a 24" Tesla coil, parts of which have been reprinted many times over the years, including in our own "Tesla Coil Secrets". Here, you get every word and every drawing. Nothing has been left out.

We can't tell how many of these plans were actually built and proven. At the very least, they'll give you many new ideas. This is detailed how-to from magazines published from September 1918 to February 1926.



It has been long, difficult, and expensive process to accumulate this information. And although you may never get your hands on the originals, at least you can get the plans they contained. Any builder will find this fascinating reading. Get a copy. 8 1/2 x 11 booklet 22 pages
Cat. no. 848 $5.95

Lakhovsky Multi-Wave Oscillator!



LAKHOVSKY MULTIPLE WAVE OSCILLATOR HANDBOOK
compiled by Thomas J Brown

Supposedly sometime before World War II, Russian experimenter Lakhovsky asked Nikola Tesla to help him design a high voltage generator that could produce electrical energy at many different frequencies simultaneously. A model of the machine was tested by physicians of the time who found that it not only had a 98% cure rate for terminal cancer, arthritis, and other "hopeless" diseases, but that it could rejuvenate plants and animals as well.

No doubt the oscillator works and is an interesting piece of equipment, but I wouldn't stake my heath or anyone else's on it. Quack medicine machines were everywhere in the 1920's & 30's. This could well be another.

In this typewritten report you get historical details, wiring diagrams, construction tips, articles on waves that heal, "documented" cases of cure, reprints of the Lakhovsky patents, and a series of reprined magazine articles on the use of radio frequency waves to cure disease.

Modern physicians have found that electrical fields can speed healing of wounds in some instances. Perhaps this material has some merit, or perhaps it's all a hoax. Maybe it's another suppressed invention. You figure it out. You'll find it interesting reading — a very unusual collection of material. Get a copy. 8 1/2 x 11 spiral bound 156 pages
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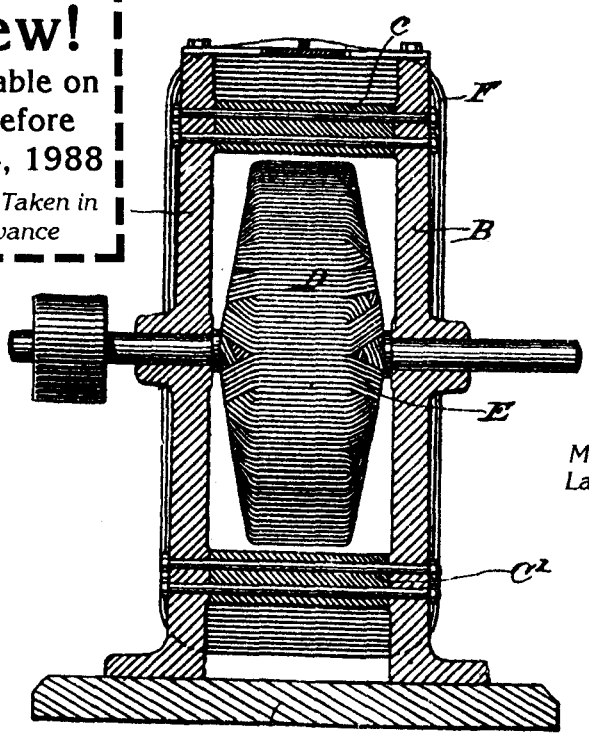

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Inventions, Researches & Writings of NIKOLA TESLA
by Thomas Commerford Martin
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The greatest world's fair ever constructed was underway in Chicago in 1893. More electricity and more electric lights were used in the fair than in the entire city of Chicago. It was the electric age, and Edison was doing with commercial battle with Westinghouse and its star, Nikola Tesla.

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Most people think of lightning generators when they think of Tesla, but that's a very narrow perspective. People should think of alternating current. Tesla created the power system used throughout the world today — one that operates at 50 and 60 cycles per second.

Tesla experimented with other frequencies, iron and air core transformers, as well as motors and generators. Tesla didn't just one day decide he was going to build his famous lightning bolt generator. It was but another step in a series of experiments that had begun years before. Here you get a complete record of this research up to 1893.

It's all here — the AC experiments and inventions that lead Tesla to experiment with ever higher voltages and frequencies, the neon tubes and flourescent lights, unusual high frequency alternators and even magnet motors.

If you want to carry on Tesla's unusual research, you must walk in his footsteps. You must do your homework. Here in one volume is the early work that will help you get your mind in sync with his and perhaps suggest what he was thinking at the time, and give you ideas of where to take his experiments.

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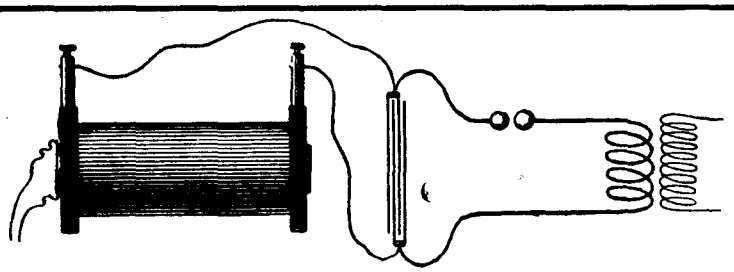
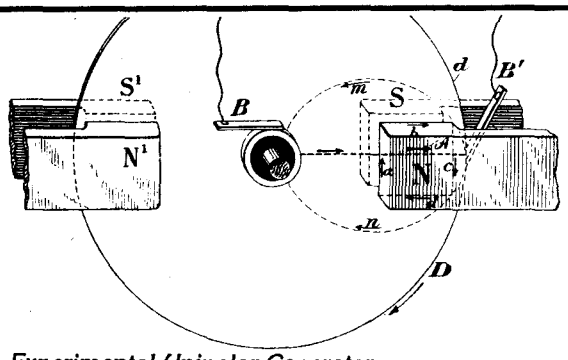


High Frequency Induction Coil Experiments



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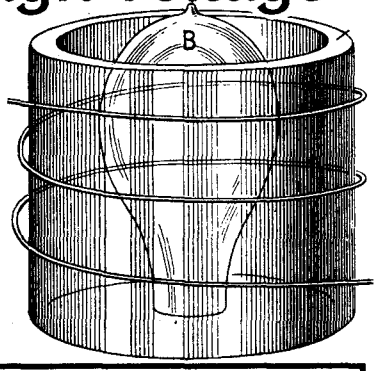
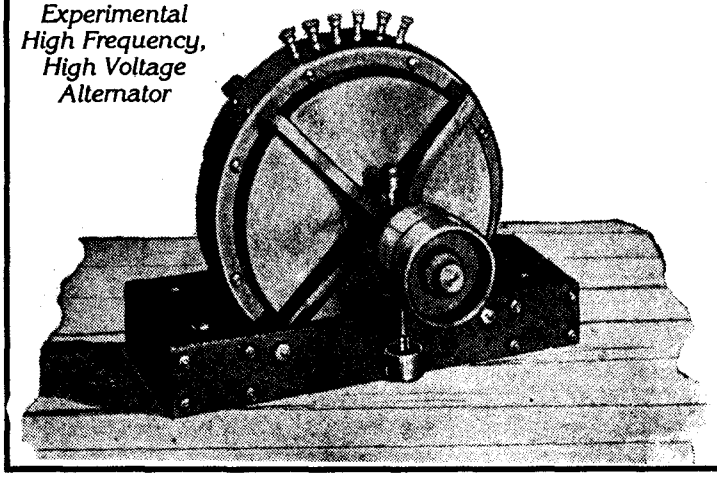


Experimental High Frequency, High Voltage Alternator



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- Utilizing Familiar Types of Generators of the Continuous Current Type
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- Single Circuit, Self-Starting Synchronizing Motors
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- Motor with "Current Lag" Artificially Secured
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- Motor with Equal Magnetic Energies in Field and Armature
- Motors with Coinciding Maxima of Magnetic Effect in Armature and Field
- Motor Based on the Difference of Phase in the Magnetization of the Inner and Outer Parts of an Iron Core
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- Thermo-Magnetic Motors and Pyro-Magnetic Generators
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"In these four volumes Fort gathered together, organized and commented on a wild host of phenomena: flying saucers seen in the sky before the invention of aircraft, flying wheels, strange noises in the sky; correlations between volcanic activity and atmospheric phenomena; falls of red snow; falls of frogs, fishes, worms, shells, jellies; finding of 'thunderbolts'; discrepancies in the schedules of comets, sightings on Mars and the moon; infra-Mercurian planets; inexplicable footprints in snowfields; flat earth phenomena, disruptions of gravity; poltergeist phenomena; stigmata; surviving fossil animals; the Jersey devil; Kaspar Hauser; spontaneous combustion....

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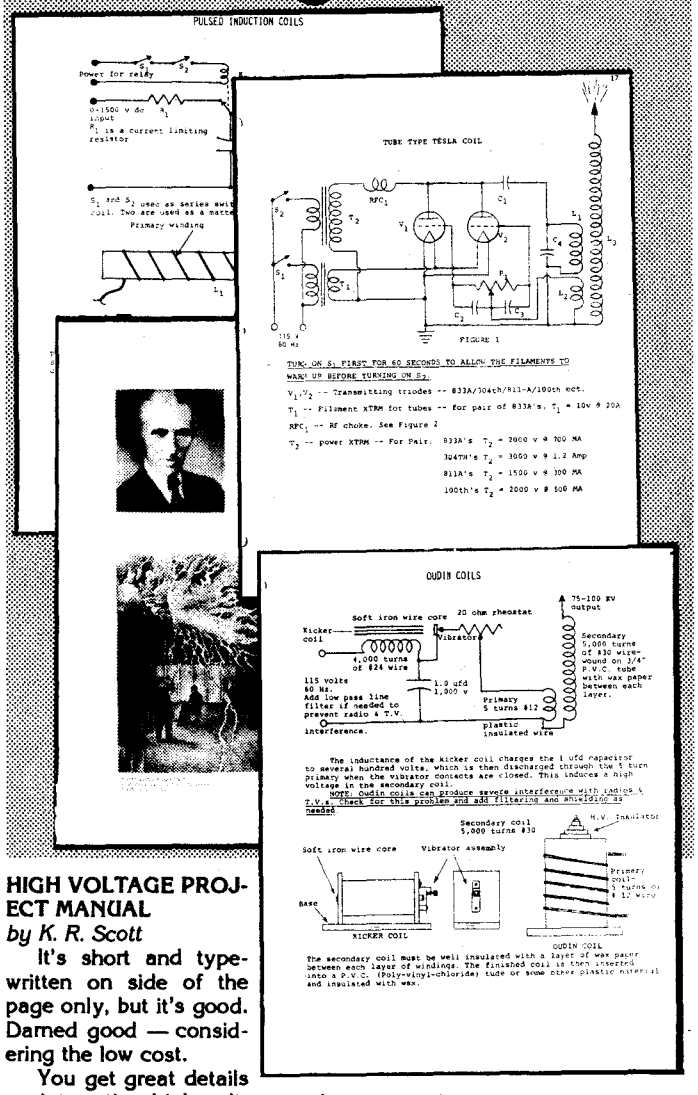

HIGH VOLTAGE PROJECT MANUAL
by K. R. Scott

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You get great details on interesting high voltage projects. The contents page lists—

- voltage doublers and multipliers
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- spark coils
- pulsed induction coils
- Oudin coils
- Tesla coil theory
- Tesla's 1892 coil design
- component design info
- construction hints
- 45 kv Tesla Coil
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You must realize that these topics may be no more than a single page. But you get details, bits and pieces, and more. And remember the cost is low. I wish this booklet were bigger, but I guess I should be thankful that it exists at all. Interesting. Quite interesting. Order a copy. 8 1/2 x 11 booklet 23 pages
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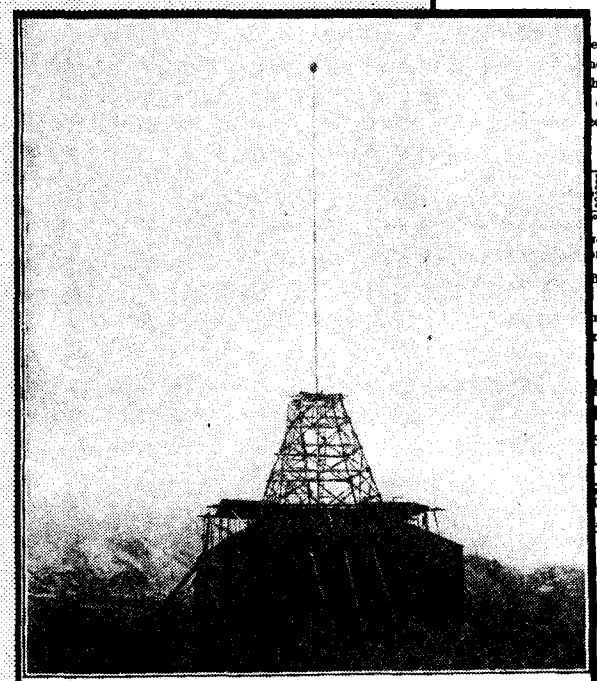
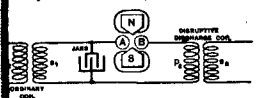


Experimental Laboratory, Colorado Springs.

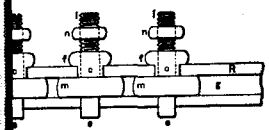
ection indicated diagrammatically in Fig. 5, e currents forming the arc are much more he magnetic field exercises a greater influ- of the magnet permits, however, of the ed by a vacuum tube, but I have encoun-



OEMENT WITH LOW-FREQUENCY ALTER- R AND IMPROVED DISCHARGER.

ficulties in working with an exhausted

n of discharger used in these and similar ndicated in Figs. 6 and 7. It consists of a pieces *c c* (Fig. 6), each of which comprises



DISCHARGER WITH MULTIPLE GAPS.

dle portion *m* with an extension *e* below— used to fasten the piece in a lathe when discharging surface—and a column above, of a knurled flange *f* surmounted by a carrying a nut *n*, by means of which a

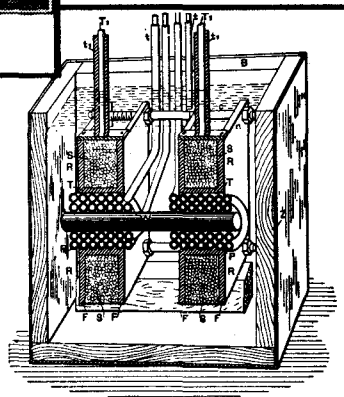


FIG. 3.—DISRUPTIVE DISCHARGE COIL.

coil and other apparatus used in the experiments with the disruptive discharge this evening.

It is contained in a box *B* (Fig. 3) of thick boards of hard wood, covered on the outside with zinc sheet *Z*, which is

EXPERIMENTS WITH ALTERNATE CURRENTS of High Potential & High Frequency
by Nikola Tesla

"A lecture delivered before the institution of electrical engineers, London, by Nikola Tesla with an appendix by the same author on the transmission of electric energy without wire, reviewing his recent work, and presenting illustrations from the photographs never before published".

Quite a title! Quite a book! There's so much written and published about Tesla (and too much of it is pure garbage), that it is refreshing to have the inventor himself explain his experiments, theories, and plans. It's all here, every page from the original 1904 book — complete with unusual illustrations showing disruptive discharge coils, improved discharger and magnet, luminous discs, single wire and no wire motor, unusual electric lights for use with the high-frequency AC that is generated by the Tesla coil, and much more.

The last fourteen pages of the book is a reprint of Tesla's article from the March 5, 1904 issue of "Electrical World and Engineer" complete with photographs of the experimental apparatus at Colorado Springs and Long Island built to test the transmission of electrical power without wires.

Anyone who studies Tesla, builds his coils, or wants to perfect the inventions that Tesla didn't have time to finish should have a copy of this book. The writings of Tesla himself should be the cornerstone of any Tesla library, and here is your chance to get your own copy of this now-rare book. Interesting reading. Historically important. Get a copy.
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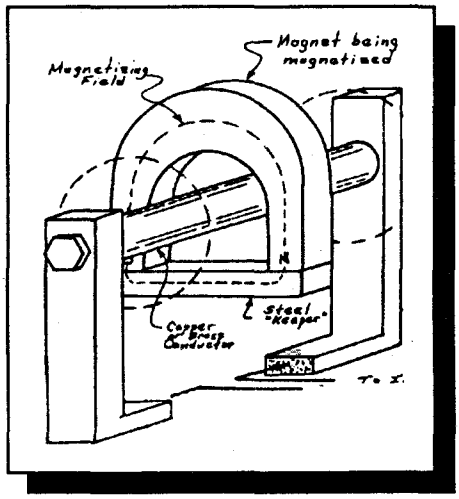

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COMMUNICATIONS RECEIVERS
Principles & Design
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COMMUNICATION RECEIVERS
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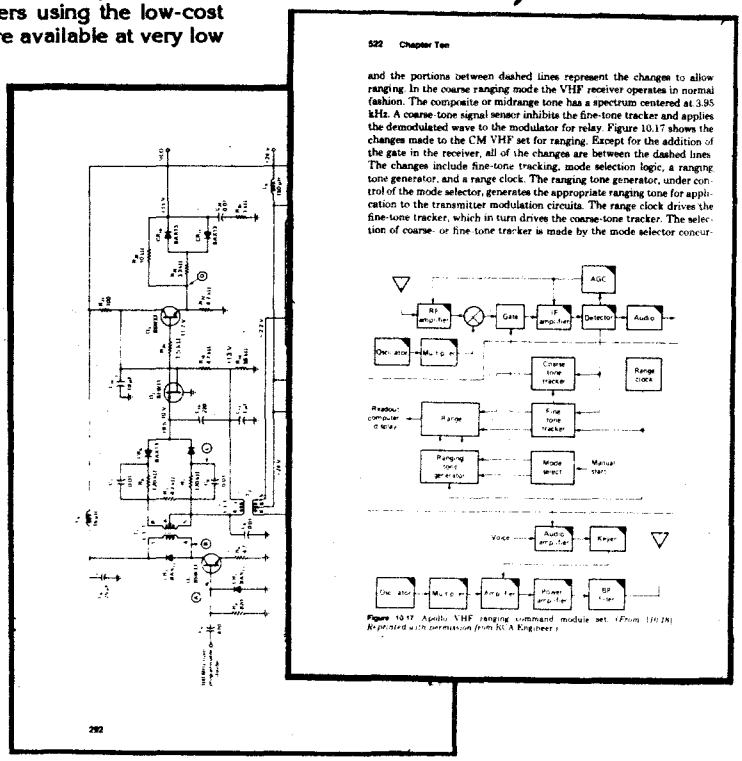

Communications Receivers is "a one-stop guide to the theory and design of all types of communicatons receivers — shortwave, military, boradcast, marine and others — this book is essential for communications engineers, design and system engineers, radio engineers, and serious radio amateurs.

"Filling a void that has existed since the 1940's, it provides state-of-the-art coverage of receiver systems, including antennas and peripherals, and offers a complete survey of basic concepts of radio design, including...

- •radio receiver characteristics
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- •proven design techniques
- •circuitry and components
- •use of microprocessors & logic devices
- •digital modulation
- •demodulation theory

Communications Receivers emphasizes both analog and digital techniques for filtering, demodulation and other relevant processing functions. It includes numerous examples of modern circuits and receiver designs and emphasizes the use of computer programs in design and simulation. Several algorithms and flow charts are included, as well as an example of program in the BASIC language...."

In other words, this will tell you how to build the best possible radio receiver. No holds barred. You'll find some math, charts, graphs and circuit diagrams. There is more here that you'll be able to comprehend in a single reading. And that's want you want. A book that delivers *MORE* information than you can use.

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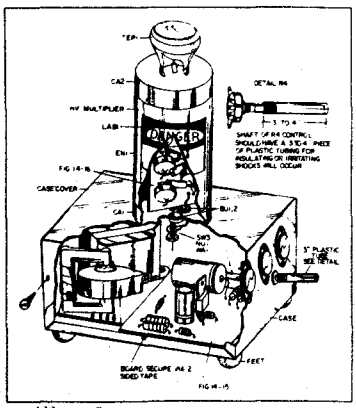
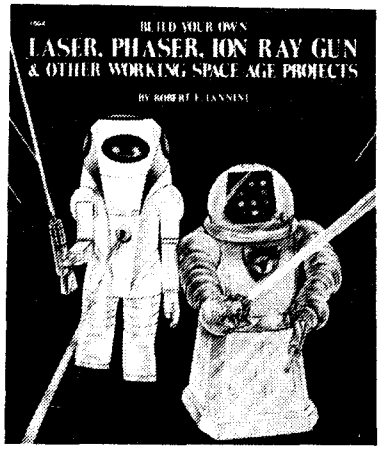
Strange Hi-Tech Electronics Plans!

BUILD YOUR OWN LASER, PHASER, ION RAY GUN. . .
by Robert E. Lannini

Here's one of the most bizarre collections of how-to plans I have ever seen. And one of the most interesting.

I suppose the building of a laser, phaser, or ion ray gun is aimed at kids who think they'll have a "Buck Rogers" ray gun. I doubt if many of the projects have practical value but they sure can be fun.





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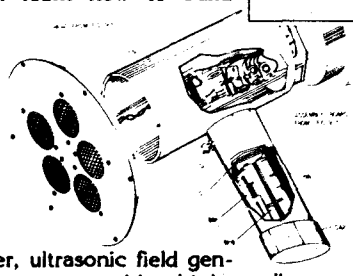
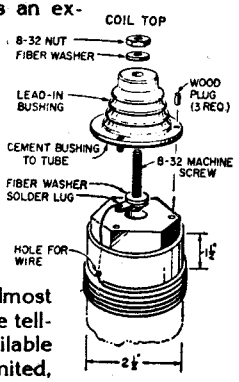


Iannini is an experienced electronics inventor, and holds many patents. He'll give you parts lists, wiring diagrams, assembly diagrams and all you need to get these projects built. I don't think that it's any coincidence that almost every plan has a footnote telling you that kits are available from Information Unlimited, Inc., which is owned by the author and which advertises in the back of the science and mechanics magazines. No doubt, that firm's best selling plans have been reprinted in this single volume.



This book is expensive, but it delivers. I really like this, and I'm sure you will too. Order a copy, even if it has to sit for two years on the shelf before you get ready to build. Excellent book.
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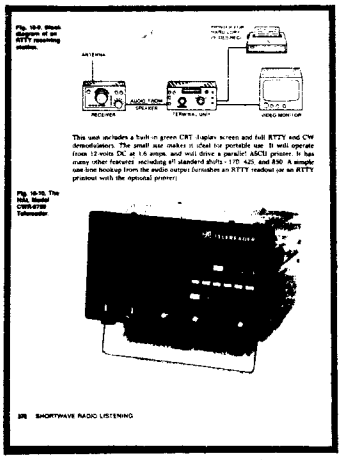

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Nothing can cure your addiction to DX'ing and SWL'ing, but [this book] can take the loneliness out of those long nights when the sky seems empty of all sounds and noises."

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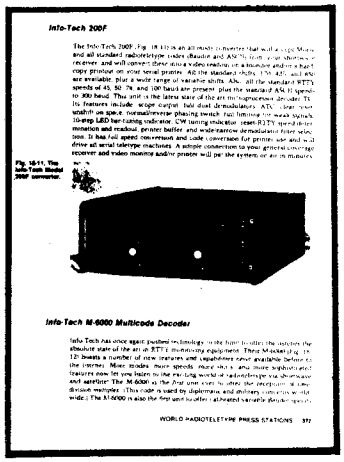
A lot of communication traffic is moving to digital methods and to satellite. But there is still much to be heard whether it's simply news from London or Moscow,



Christmas messages to mama from crew members on merchant ships at sea, or local police and fire.

You may want to spend a ton of money on a sophisticated radio. Or you can do like me and build a two transistor regenerative set for a particular shortwave band and marvel at the unusual stations you can hear.

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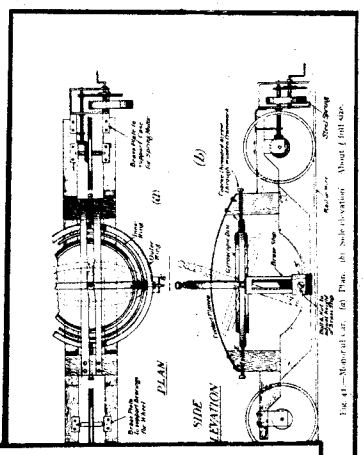

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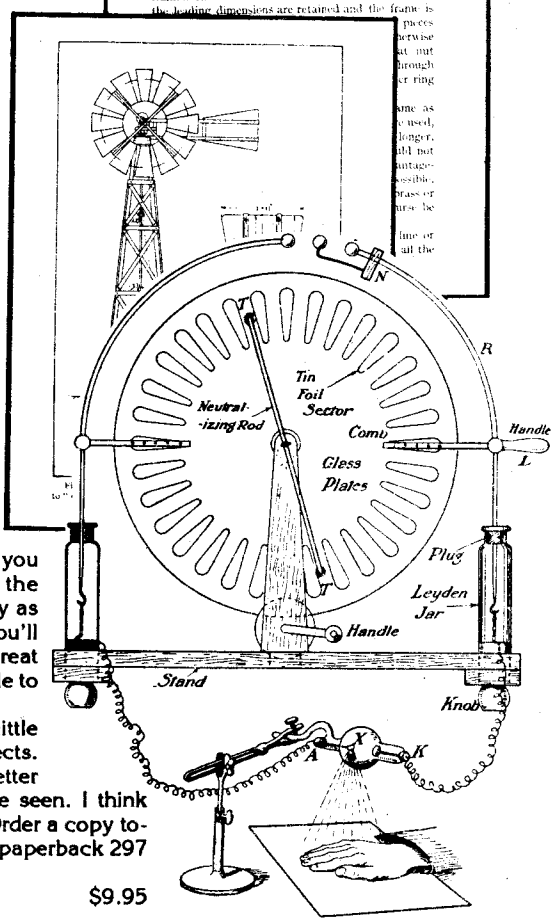
GYROSCOPIC MONORAIL RAILWAY. 147

them by hammering them on what is intended to be their concave side. The end holes to take the screws or nuts which attach them to the framework should be a rather loose fit to permit delicate final adjustment by tapping before the screw or nut is tightened up fiard.

The Framework.—The wooden framework shown in plan in Fig. 41, *a*, and in elevation in Fig. 41, *b*, next demands attention. Poplar or American whitewood is a very suitable wood, being light, free from knots, and easy to work. The actual manner in which the framework is constructed is immaterial, so long as the leading dimensions are retained and the frame is



You'll find the models are generally not all that complex, yet they really work. Even if you don't build the models exactly as described, you'll at least get great ideas adaptable to other uses.

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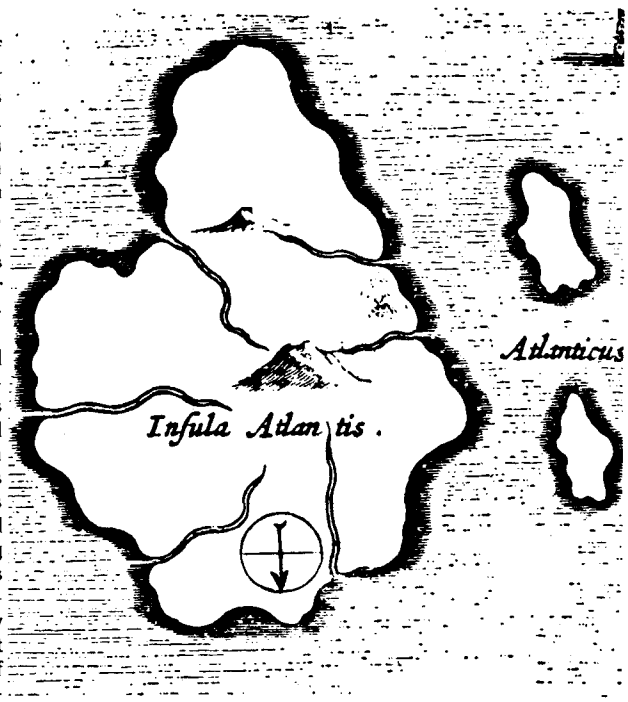
LOST CONTINENTS

LOST CONTINENTS
by L. Sprague de Camp

"Ever since the first account of Atlantis appeared in Plato's *Dialogues*, the idea of lost continents has fired man's imagination. A massive land-mass called Mu in the Central Pacific; Lemuria, a mighty land-bridge between India and Africa; the famed Atlantis; all, according the various theories, were sites of strange civilizations before the waters closed over their glories and they sank to the bottom of the sea.



Here, in the most detailed study ever compiled of lost continent mythology over the years and around the globe, a noted author, teacher and historian sorts fact from fiction, and reports just about everything that has ever been thought or written, said or done about this fascinating theme... Mr. de Camp covers them all: the alleged pre-Columbian discover of the New World by the Welsh; the location of the Lost Tribes of Israel; the life history of humanity's 12 foot tall, three-eyed ancestor, the apelike Lemure; and many other absorbing sagas..."

You'll find this reprint of the 1954 original very interesting reading. An essential reference for lost continent research. A lot book for the money. Get a copy. 5 1/2 x 8 1/2 paperback 348 pages 17 illustrations & maps
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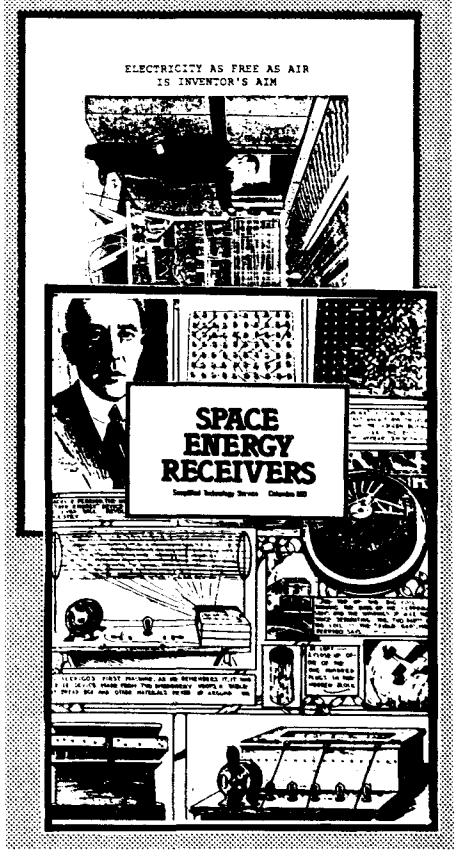
Space Energy RECEIVERS



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by Simplified Technology Service

"Space energy receivers... may be defined as a class of devices which apparently collect electrical energy from the surrounding space without applied force, by some process other than chemical or mechanical action..."

What? Pull energy out of thin air? That's what they claim. Do they work? At least a few were built to defraud gullible investors. **BUT!** There *IS* energy out there, and extracting it would be comparable to geothermal power. You're not creating energy, just tapping existing reserves.

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In addition, you get reference books to read, a list of experimenters, and other tidbits. It's quite interesting, and if there is one complaint I have, it's that "Receivers" is just not long enough. I think you'll like it. Very unusual! Order a copy. 8 1/2 x 11 booklet, 21 pages.
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Larry Sturgill

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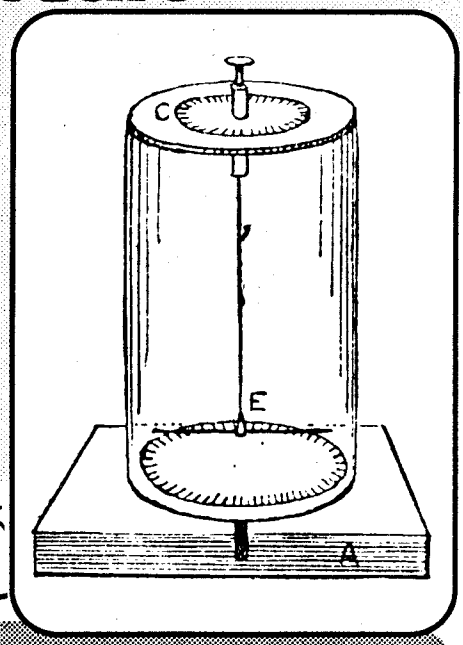
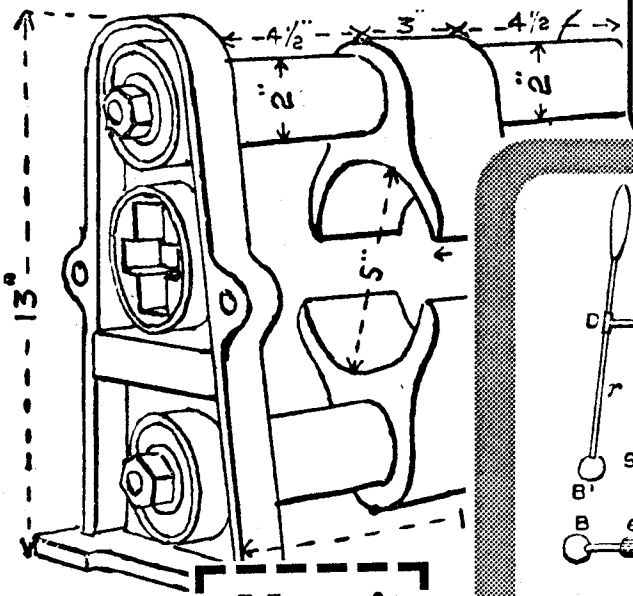
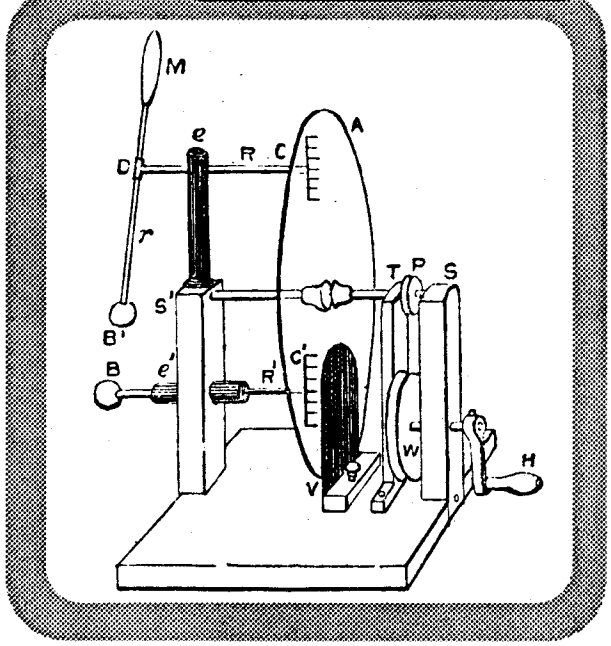
Electrical Instrument Making for Amateurs

Build Unusual Electrical Equipment from 1888!







ELECTRICAL INSTRUMENT-MAKING for Amateurs
by S. R. Bottone
reprinted by Lindsay Publications Inc

The words "electrical instruments" bring to mind test equipment: meters, signal generators, and oscilloscopes. But back in 1888 when this volume first hit the bookstores, electrical instruments could be anything from simple Leyden Jar capacitors and static electricity machines to dynamos and telephones, as well as ammeters, voltmeter and galvanometers.

With this as your guide you can go back a hundred years and imagine what it must have been like to be experimenting right at the cutting edge of technology. You can build your own batteries from scratch, use them to run a shocking coil while you monitor the current draw with homemade meters!

You get basic information on materials, soldering, and working glass. Then you build pith ball and gold leaf electroscopes, a Coulomb torsion balance, and Volta's electrophorus static generator. You'll learn how to take a sheet of glass and cut a circle from it, drill a hole in the center and use it to build Bertsch's high-voltage static generator, Carre's Dielectric machine, a Holtz machine, and a Wimshurst influence machine. Any one of these machines is powerful enough to shock the underwear off Aunt Annabelle! And you get info on building a Leyden Jar, Franklin plates, and a microFarad condenser.

Next come the devices that use current electricity. You'll learn how to build a medical coil that produces a 1/2" spark, or if you care to make a simple modification you can get 1" spark, in which case the machine is called an induction coil. With a powerful magnet you can make a shocking machine which appears to be little more than a simple magneto. Then you build a uni-direction current machine (a motor), a dynamo, an ammeter, a voltmeter, a galvanometer, and a thermopile that produces electricity directly from heat.

You'll be shown how to build batteries, a single fluid cell, a double fluid cell, and using these two basic configurations how to create powerful batteries using chemicals from zinc chloride and sulphuric acid to sal ammoniac and potassium dichromate which are more commonly known as the Daniell, Bunsen, Smee, Walker cells and others.

Then you get simple plans so that you can build a working electrical telephone, the newest rage a hundred years ago. And finally you get a couple of appendices that add additional information on galvanometers and batteries.

New!
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Obviously so many topics are covered in such a small book that the number pages devoted to each topic are necessarily limited. Any one topic could really be expanded into a book of its own. But even so, you get enough useful information to build working equipment. The illustrations are primitive by today's standards, but are very informative nonetheless.

This is a fascinating book you're sure to enjoy. Lot's of valuable information at a price far below what you would have to pay for a now-rare original copy. With this book you can go back and rediscover the world of electricity. Get a copy. You'll really like it. 5x7 paperback 183 pages

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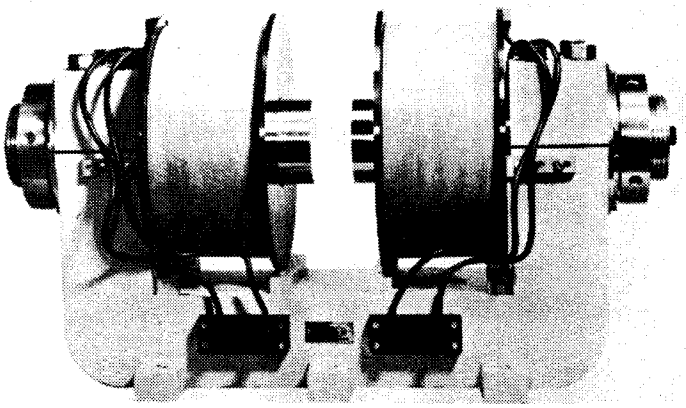
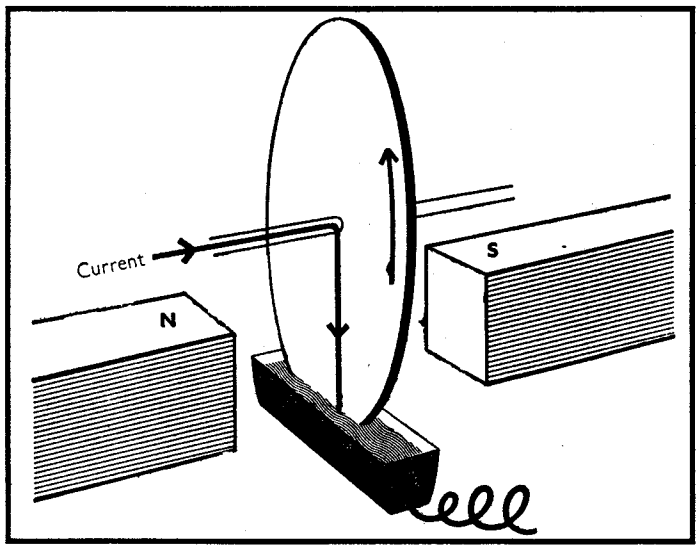
Introduction to MAGNETISM





MAGNETISM — An Introductory Survey
by E. W. Lee

The back cover of this book explains it all very well...

"The lodestone was known to the ancient Greeks; the Chinese knew of the compass a thousand years ago; in the 16th century Gilbert described magnetic poles. Professor Lee takes us through the early experiments to the first modern accomplishments of Oersted, Ampere and Faraday. We then learn the principles behind electric motors, dynamos, transformers, permanent magnets, synchrotrons, solenoids, memory banks in computers, betatrons, magnetic supercooling, and other modern applications....

"The author shows us how magnetism 'works,' with reference to such concepts and principles as lines of force; ferromagnetism; the atomic theory of matter in relation to electromagnetic properties; paramagnetism and diamagnetism; quantitative measurement of magnetic force; domains and domain boundaries; high-permeability alloys, their theoretical basis and uses; magnetic matrices used as computer-age storage devices; ferromagnetism and antiferromagnetism; the use of magnetism in modern scientific research; and problems of the earth's magnetism, including its meaning to Wegener theory of continental drift and solar phenomena."

You get 60 diagrams and sketches and more than 32 pages of photographs. If you want to explore the theory, you can study the mathematics that explains magnetism.

This is one heck of a lot of book for the money. And it's must reading for basement engineers, experimenters, even the guy who's trying to build a magnetic motor or perpetual motion machine. Great background information. Order a copy. 5 1/2 x 8 1/2 paperback 281 pages
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Great Electricity Text!

ELECTRICITY 1-7
edited by Harry Mileaf

Find *Electronics 1-7* in this catalog and read what we have to say about it. You'll know in an instant why we offer this companion book. It's every bit as good!

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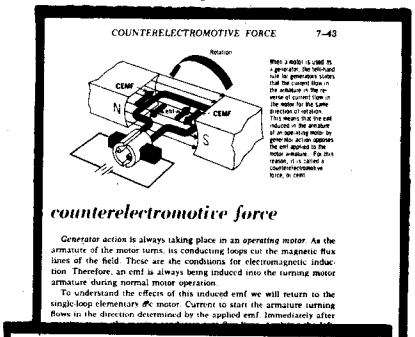
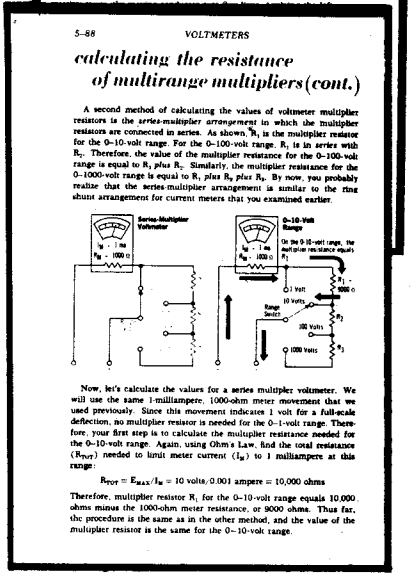

COUNTERELECTROMOTIVE FORCE 7-43

counterelectromotive force

Generator action is always taking place in an *operating motor*. As the armature of the motor turns, its conducting loops cut the magnetic flux lines of the field. These are the conditions for electromagnetic induction. Therefore, an emf is always being induced into the turning motor armature during normal motor operation.

To understand the effects of this induced emf we will return to the single-loop elementary dc motor. Current to start the armature turning flows in the direction determined by the applied emf. Immediately after


5-88 VOLTMETERS

calculating the resistance of multirange multipliers (cont.)

A second method of calculating the values of voltmeter multiplier resistors is the *series-multiplier arrangement* in which the multiplier resistors are connected in series. As shown, R_1 is the multiplier resistor for the 0–10-volt range. For the 0–100-volt range, R_1 is in series with R_2. Therefore, the value of the multiplier resistance for the 0–100-volt range is equal to R_1 *plus* R_2. Similarly, the multiplier resistance for the 0–1000-volt range is equal to R_1 *plus* R_2 *plus* R_3. By now, you probably realize that the series-multiplier arrangement is similar to the rinz shunt arrangement for current meters that you examined earlier.

Series-Multiplier Voltmeter

0–10-Volt Range

Range Select

1 Volt

10 Volts

100 Volts

1000 Volts

Now, let's calculate the values for a series multiplier voltmeter. We will use the same 1-milliampere, 1000-ohm meter movement that we used previously. Since this movement indicates 1 volt for a full-scale deflection, no multiplier resistor is needed for the 0–1-volt range. Therefore, your first step is to calculate the multiplier resistance needed for the 0–10-volt range. Again, using Ohm's Law, find the total resistance (R_{TOT}) needed to limit meter current (I_M) to 1 milliampere at this range:

$$R_{TOT} = E_{MAX}/I_M = 10 \text{ volts}/0.001 \text{ ampere} = 10{,}000 \text{ ohms}$$

Therefore, multiplier resistor R_1 for the 0–10-volt range equals 10,000 ohms minus the 1000-ohm meter resistance, or 9000 ohms. Thus far, the procedure is the same as in the other method, and the value of the multiplier resistor is the same for the 0–10-volt range.

Top Quality!

Just a few of the topics covered:

- electrical charges
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- current
- magnetism
- electric circuits
- resistance
- resistors
- power
- Ohm's law
- series circuits
- parallel circuits
- serie-parallel circuits
- Thevenin's Theorem
- Kirchoff's Laws
- DC circuit failures
- alternating current
- AC waveforms
- resistance AC circuits
- inductance
- inductive DC circuits
- inductive AC circuits
- transformers
- capacitors
- capacitive AC circuits
- power factor
- capacitor types
- vectors
- RL circuits
- RC circuits
- LC circuits
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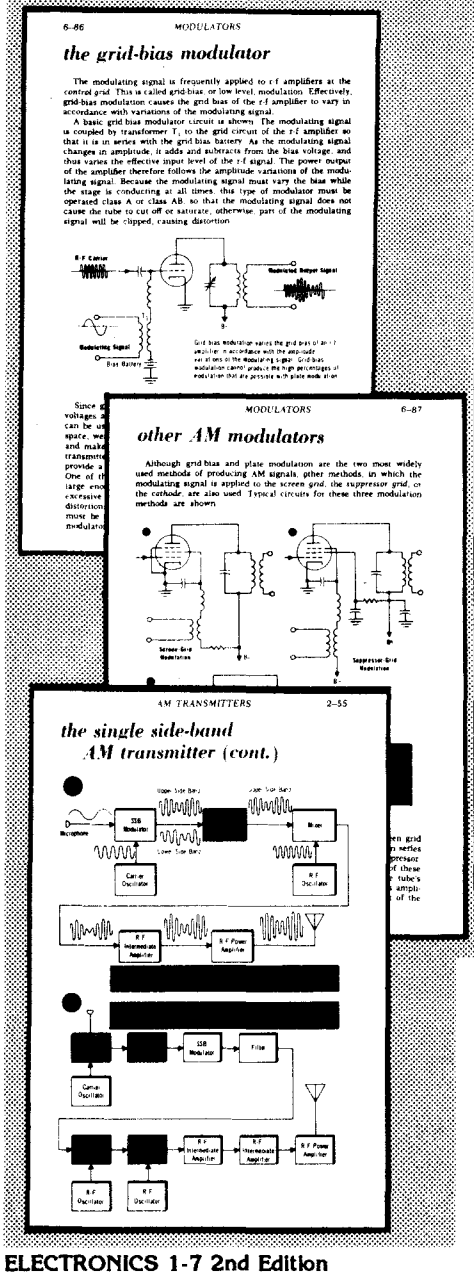
- meter construction
- rectifier meters
- meter calibration and accuracy
- ammeters
- voltmeters
- ohmmeters
- the megger
- power meters
- dry cells
- storage batteries
- alkaline cells
- battery characteristics
- DC generators
- field windings
- armature windings
- DC generator construction
- AC generators
- output phases
- auto alternators
- motor-generators
- dynamotors
- AC & DC motors
- motor construction
- motor classifications
- compound motors
- and on, and on, and on...

Incredible Electronics Textbook!



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- side-band modulation
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- oscillation
- frequency response
- thyristors
- field-effect transistors
- FET circuits
- integrated circuits
- rectifiers
- filters
- load resistors
- voltage dividers
- voltage multipliers
- phase splitters
- RF amplifiers
- frequency-multipliers
- LC oscillators
- crystal oscillators
- RC sine-wave oscillators
- relaxation oscillators
- mixers
- converters
- discriminators
- gating circuits
- counters circuits
- limiter circuits
- antennas
- and much, much MUCH more!

ELECTRONICS 1-7 2nd Edition
edited by Harry Mileaf

I've seen a thousand electronics books from the oldest to the newest, and in my opinion, this one of the very best I've seen. If you're new to electronics or just need a great reference for those areas in which your knowledge is weak, then this book is for you.

What I like is the simply written, yet detailed and complete text and the clear informative illustrations that drive home the lessons being taught. Some books race through complex topics and don't really explain themselves. Not here! The authors take their time and really teach.

Originally, this book was issued as seven paperbacks, no doubt for schools. Here you get all seven books in a single hardcover volume. Yes, it's expensive, but it's cheaper than buying the individual volumes, and you definitely get your money's worth. The table of contents alone, is eighteen pages long!

This is not a how-to projects book. This is a textbook that teaches the electronic principles behind the equipment you buy and build. You'll learn the complex terms, how components work by themselves and together to build up complex systems.

Again, this one of the very best electronics course I've seen. If you need just one good electronics book then this is it. There are many other good ones on the market, but I'd put my money on this one any day. (I wish I had published it!) Great book. This should be on every electronics-buff's reference shelf. Order a copy! 6x9 hardcover almost 1000 pages wall-to-wall illustrations

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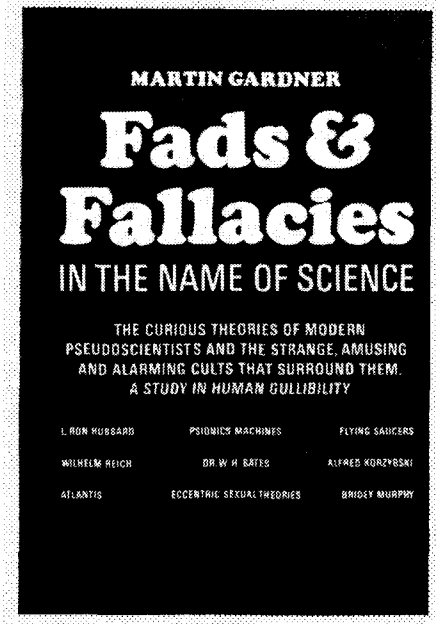

FADS & FALLACIES
In the Name of Science
by Martin Gardner

If you find "Fringe Science" impossible to believe, you'll find this book right down your alley. Gardner presents his views on "the curious theories of modern pseudoscientists and the strange, amusing and alarming cults that surround them. A study in human gullibility."

Gardner tears apart Symmes and his hollow earth theory, Velikovsky and wandering planets, the multiple moon theories of Horbiger & Bellamy, Charles Fort and the Fortean society, dowsing and other strange methods of finding natural resources, naturopathy, iridiagnosis, zone therapy, food fads, orgone sex energy by William Reich, L. Ron Hubbard and dianetics, Koryzbski and his General Semantics, Atlantis, flying saucers, and Bridey Murphy.

Gardner shoots them down, and many of them deserve it. But whether you agree with Gardner or not is immaterial. Here, you'll read about many strange ideas for the first time. You can read Gardner's point of view and then do your own research and decide whether you want to agree with him. What I especially like is the appendix that lists many unusual articles and books along with fascinating footnotes.

In other words, Gardner may attack something you really believe in, but in doing so might very well provide you with new directions for your own investigations.

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Secrets!

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Hypnotism in 1900 was an even hotter topic than it is now. Everyone was apparently trying to hypnotize everyone else. And this is one of the books that taught them how.

Just like it says, you get thirty different chapters covering things like hypnotism by direct suggestion, how to control people in their waking state, suggestion in trance phenomena, how to hypnotize difficult subjects, personal magnetism, history of hypnotism, how to hypnotize and awaken a subject, and much more.

Does it work? If you intend to persuade your mother-in-law to jump off a bridge, probably not. And I haven't had much luck using hypnotism to housebreak my dog. But no doubt the methods written about were actually used successfully by the authors.

I think it's interesting reading. If you want to try it and start a nightclub act, you're on your own.

Some of it is boring, other parts fascinating. (Sounds like most books, doesn't it?)

If unusual books are your thing, consider this carefully. This is one of more offbeat, yet quality, books I've come across in recent months. Maybe you, too, can become Mandrake the Magician! Get a copy. 5 1/2 x 8 1/2 paperback 260 pages
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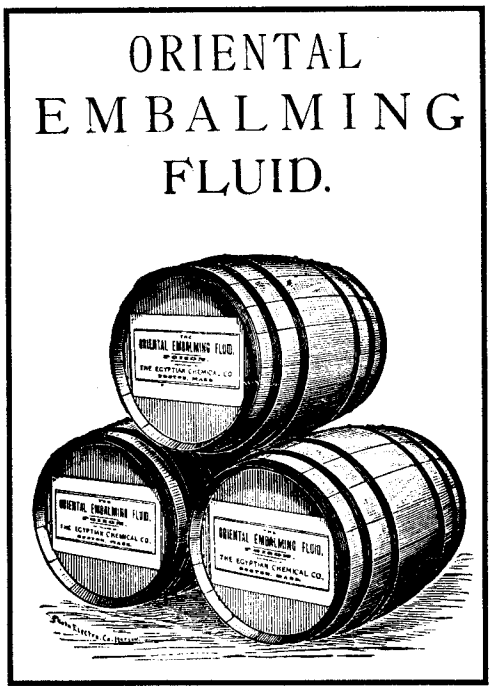

Embalm Corpses!

PRESERVING THE DEAD
The Art & Science of Embalming
reprinted by Lindsay Publications

Just imagine! You're at a cocktail party among a large group of friends when the converstaion turns to hobbies. Imagine how envious they'll be when you tell them you're an amateur embalmer! Imagine their admiration when you dirft up the bartender and order another formaldehyde on the rocks!

Seriously, this might not have practical application, but you cannot deny that it's unusual! Maybe after reading this you'll change your mind about eventually dying...

What you get are the best parts of two books published in 1900 and 1908 for undertakers-to-be. From one book we kept the fascinating, but all-too-brief history of embalming from the ancient Egyptians to the present. We kept the practical details of actually embalming a body, from removing the blood to special techniques.

In the last section you get a fascinating, and sometimes amusing collection of tips from practicing undertakers who will tell you how to line the carriages up in front of the deceased's home for the funeral, why you should wear clean clothes, and why you shouldn't drink whiskey before the funeral.

Many pages of human anatomy have been left out.

Yes, there are pictures but they're not all that grotesque. If you're expecting to see mangled corpses, forget it. Not here.

You get details on embalming using various major arteries, how to inject cavities without showing mutilation, needle embalming, and much more. You also get tips on handling cases where death was caused by diptheria, typhus, anthrax, bubonic plague, drowning, electrocution and more.

If you find this revolting, order a copy for your Aunt Aggie whom you've been antagonizing for years. Give her this book the next time you have to have her over for dinner, and shock her out of her mind!

Whatever your interest, whatever your angle, get a copy of this unusual book. This is not a book you'll find at the local newstand. It's so different, there's no question you'll find something of interest that makes it worth the price. 5 1/2 x 8 1/2 paperback about 224 pages
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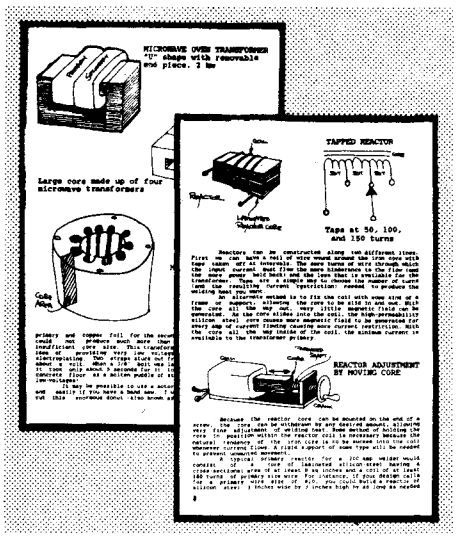
Build A Powerful Welder!



How to Design and BUILD A 200 AMP WELDER

You can find many different welders on the market, so why even consider building one? Maybe you can save money. Perhaps you need something bigger than 200 amps and want to scale up a standard design. Of course, there's always the pride of being able to say you built it yourself. Or perhaps you would just like to know how they work.

Here's a publication for the mechanic (the non-electrician) — an introduction to transformer welders. You'll learn how transformers work, what is and is not important in the design of a welder transformer, how current is controlled, how an AC to DC rectifier bank is built, and more. You can design welders for 100, 200 or more amps using the principles revealed here.

You will *NOT* get complicated theory. You get information that has been learned by study and by doing, rather than from designing transformers as a profession. You'll learn the unique aspects of controlling heavy welder currents. This is information generally available nowhere else. After reading and studying this manual, you'll probably want to refer to other books which cover heavy transformer design theory, details on silicon steel, wire types, design problems and much more.

You can build a single transformer that can kick out heavy currents for welding, thawing pipes, AND, when used with a bridge rectifier, can be used to charge batteries, electroplate and more.

Get a copy of this hot little manual. You'll find that it is very clearly written and easy-to-read. This is the FIRST book you should consider before building or even possibly repairing a transformer welder. Order a copy today. 5 1/2 x 8 1/2 30 pages.

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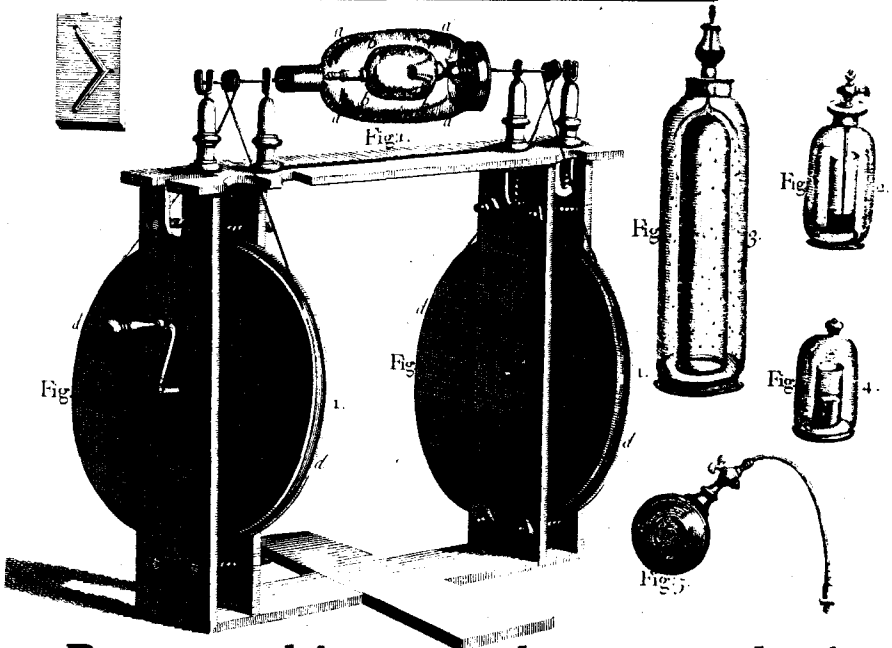
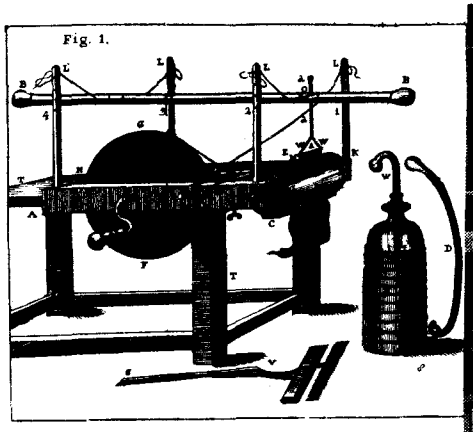
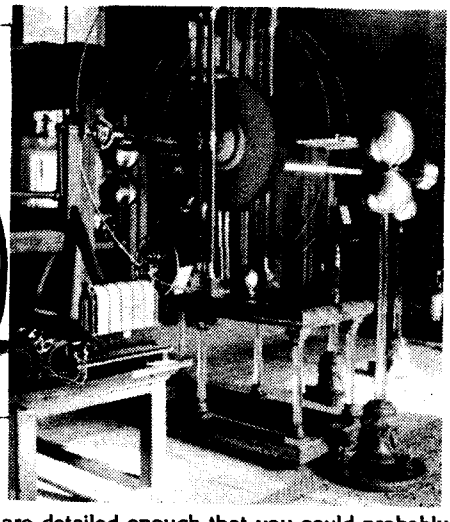
Early Electrical Machinery!

High Voltage Generators



Rare machines rarely seen today!





EARLY ELECTRICAL MACHINES
by Bern Dibner

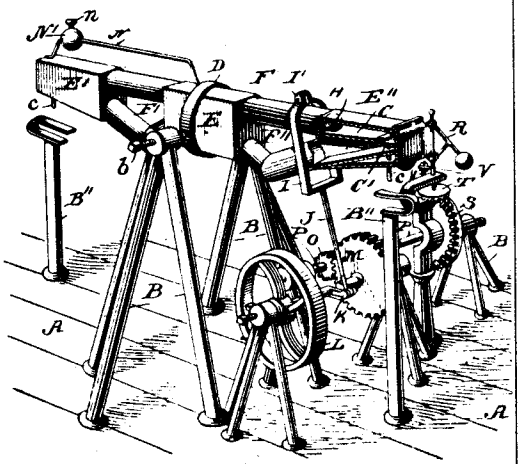
This is the story of electrical apparatus and experiments of the 1600's and 1700's. Obviously, it's about static electricity. You'll see rare woodcuts of unusual generators such those by van Marum, Watson, Franklin, Hauksbee and others. The Leyden jar is discussed. Even that lunatic that flew a kite in a thunderstorm... what was his name? Oh! Ben Franklin.... is discussed. See Richmann fry himself as he repeats the experiment!

This is not a how-to book, but the plates are detailed enough that you could probably get good ideas for the construction of high voltage generators. The free energy and perpetual motion people believe there might be more to these machines than meets the eye. The rest of us would just like to built a machine to shock the glasses off grandma!

Quality papeback. Rare info. Well illustrated. Very interesting. 8 1/2 x 11 paperback 57 pages

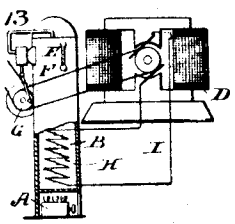
Cat. no. 355 $6.50

FIFTY Perpetual Motion Mechanisms

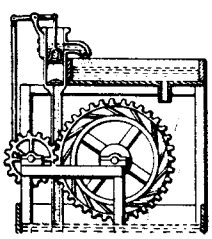


FIFTY PERPETUAL MOTION MECHANISMS
by Fred Dieterich
reprinted by Lindsay Publications

The author was a patent attorney at the turn of the century. I suppose that so many people considered themselves inventors and presented him with so many headaches that he wrote a book entitled "The Inventors Universal Eduator" covering the process of securing a patent. It sold for many years starting 1899.



One short section of his book covers perpetual motion inventions which are unpatentable. Dieterich, who was outraged by claims of perpetual motion, presents drawings of 50 different mechanisms. No doubt, you've already seen a number of these, but others are unique, and all are interesting.



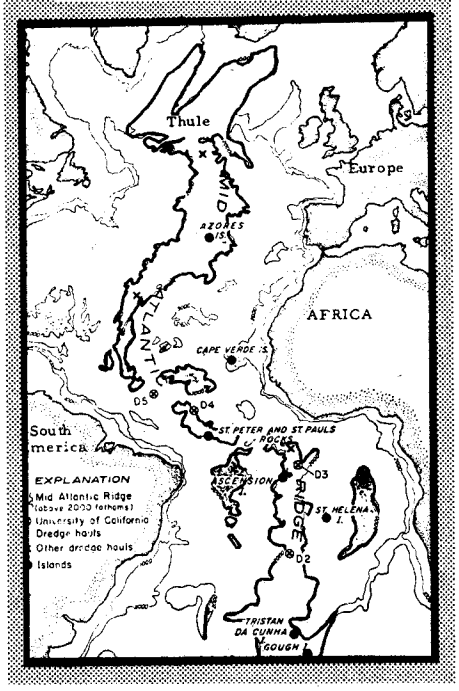
You'll see the Marquis of Worcester wheel, the Horace Wickham machine, the 1868 device of Dr. Drasch of Austria, an electric device, the self-moving railway, the Orfyreus 1720 wheel, a complicated water screw, and others.

If you're into PM, you'll want to add this to your collection. Maybe you're trying to build a machine and want to avoid previous failures. Or you're a skeptic and want a good laugh. Whatever, the material is interesting and the price is low. Get a copy. You'll like it. 8 1/2 x 5 1/2 booklet 22 pages

Cat. no. 898 $3.75

MYSTERIES!

- *Mind Control*
- *Atlantis*
- *UFO's*
- *Tesla*
- *Suppressed Inventions*
- *much more*



ENIGMA FANTASTIQUE
by W. Gordon Allen
copyrighted by Tesla Radiation Inc.

"Why was only a small portion of Dr. Tesla's work permitted to be used by world industry? What were the incredible SECRETS of mind control demonstrated by the life of Nikola Tesla? What do the mind-control secrets of Dr. Tesla and Dr. Rudolf Steiner have in common?. . . "

This is another of those strange "revealing" books that declare they have all the answers to why certain inventions, ideas and developments are being "suppressed." You can laugh at it, or take it seriously. Your choice.

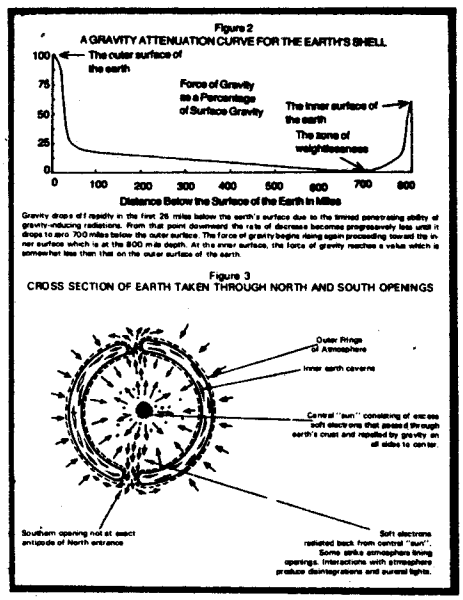
Whatever your point of view, you should find it interesting. You get descriptions of Tesla's ideas of power transfer, Dr. Rudolf Steiner and his strange ideas, Atlantis, UFO's, and a bunch of other things.

Under no circumstances do I endorse any of this. I offer it only as entertainment, science-fiction, if you like. Although that's my opinion, you may be convinced that it's fact. You decide.

Spiral bound, 197 page typewritten book with poorly reproduced photos. 8 1/2 x 11

Cat. No. 724 $10.00

Strange New Explanation of the Universe!



THE AWESOME LIFE FORCE
by Joseph H. Cater

The author is one of those people who claims that the government, the pentagon, NASA, the science community and others are suppressing knowledge and telling us lies, and that he alone has solved all of the mysteries. Although I find that hard to believe, some of his arguments are interesting.

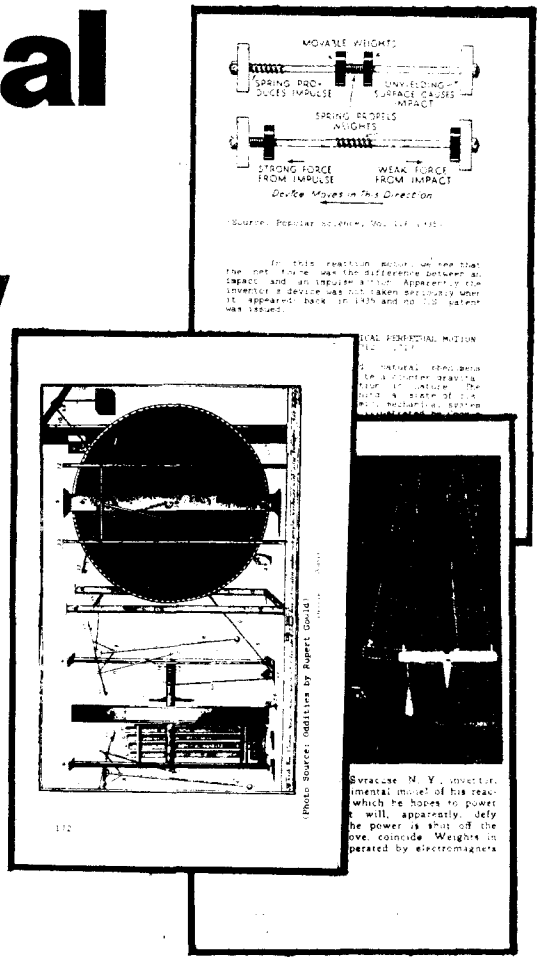
Chapters include: undeniable discrepancies in conventional science, cause of tides, the hollow condition of the earth, closer look at the properties of light, popular misconceptions of atomic and particle physics, practical free energy devices, the Searl effect and related UFO phenomema, research of Von Reichenback, pyramid of life, resolving the mystery of teleportation, materializations from higher realms, origin and transference of disease, and much more.

The author claims that there are holes at the north and south pole that go to the center of the earth. They've been seen and photographed by astronauts but are suppressed by NASA because they can't be explained.

If you believe in this sort of thing, you'll love this book. If you're trained in the sciences,you'll find many of his arguments border on the ridiculous. But regardless of what side of the fence you're on, you WILL find this interesting reading. It's as far out as any book I've seen yet. 5 1/2 x 8 1/2 paperback 475 + pages

Cat.no. 679 $14.95

Perpetual Motion Mystery



A Serious Inquiry into PM!

THE PERPETUAL MOTION MYSTERY
by R. A. Ford

Perpetual motion. Some people laugh at it. Others take it very seriously. Here's a serious look at these unusual systems.

First, you get a reprint of the small and now-rare "Perpetual Motion Handbook Through Entropy Reversal" published in 1967 by I. R. Barrows. Then, you get his first (and last) four "Perpetual Motion Journals" published about the same time. Each is small but filled with letters patents, ideas, illustrations, and thought-provoking suggestions.

The author jumps into a discussion of why perpetual motion might be possible, pointing out unusual theories from the past, and pointing out possible defects in current theories.

Covered are kinetic gravitational theories of the 18th century, DesCarte's Vortex Theory, LeSage's Impact Theory of Gravity, and Brush's Wave Theory. Attempts at experimental confirmation of these thories are then provided.

Natural gravitational anomolies such as solar eclipse, bulging river surfaces, bore at sea, unusual rock movements, slowly falling hail are revealed. You'll learn about Robert Cook's inertial propulsion device and its relation to Newton's Law.

The last large section covers the Orffyreas wheel built in Germany centuries ago. The author believes it might have been the only real perpetual motion machine yet invented, the secret of which was lost. You'll learn about the inventor's life, his education, his wheels, his successes and failures, the tests, and more.

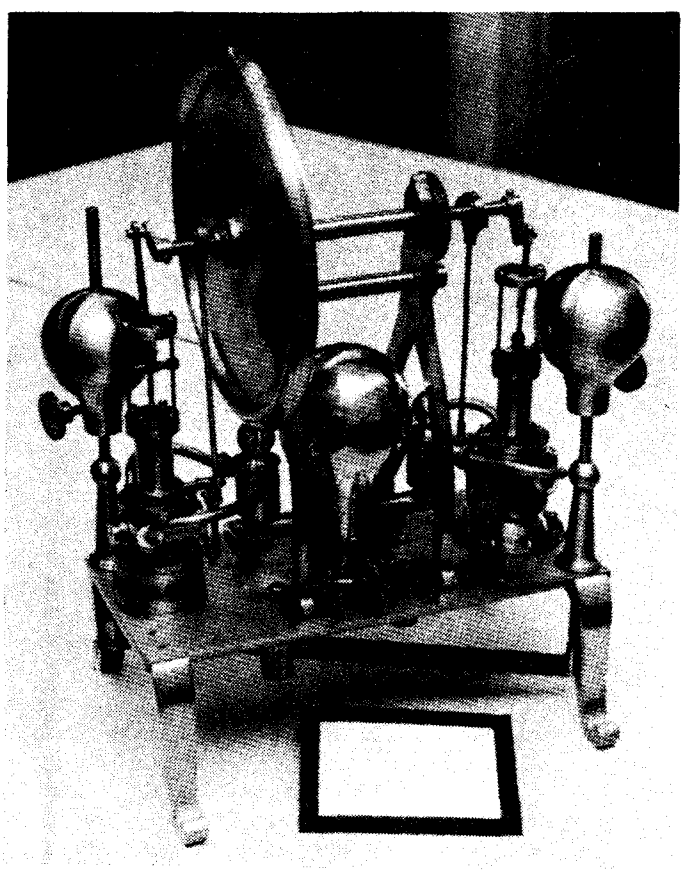
Last, the author, based on the material presented in earlier chapters suggests how a perpetual motion machine might be built.

You get a collection of strange, rarely seen stories and phenomena that might hold the key to perpetual motion, if, indeed, such a machine can be built.

This is not a construction manual, nor is it extremely complex. It's a notebook gathered over the years, one that should be interesting to believers and non-believers.

Consider it. You won't find anything quite like it on the market. Different. Unusual. Interesting reading. Get a copy.
5 1/2 x 8 1/2 paperback 196 pages
Cat. no. 4538 $9.95

PERPETUAL MOTION HISTORY



PERPETUAL MOTION
The History of an Obsession
by Arthur Ord-Hume

People for centuries have attempted to build a machine that will produce more energy than it consumes. And they've all failed.

If you think you've invented a new type of perpetual motion machine, you had better read this book. Chances are, it has already been attempted.

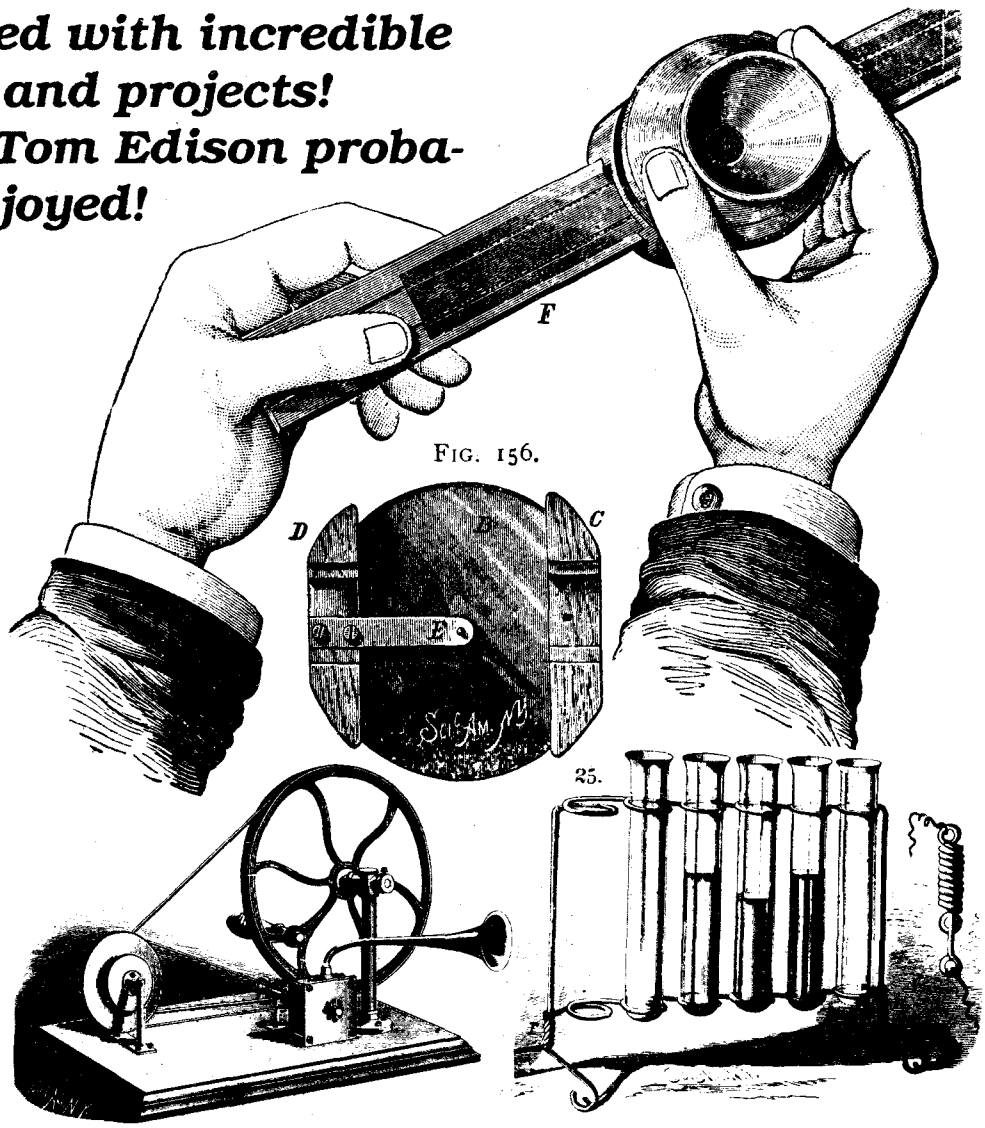
For the rest of us, this book is interesting reading. There are some machines, that don't actually produce energy, but they run seemingly forever on a small amount of energy, like Singer's perpetual chime that was set up in 1840 and is still operating!

Learn about medieval machines, self-moving wheels, lodestones, electromagnetism, steam, capillary attraction, spongewheels, Cox's machine, the Redheffer device, the Keely motor, odd ideas about vaporization and liquification, the barring of perpetual motion devices form the patent office (although the magnet motor sneaked in), rolling ball clocks, and more. You get lots of illustrations, and an excellent list of references for further reading.

Interesting book! Well written and researched. Excellently done. If nothing else, put one in your reference library. It's not all that expensive. 5 1/2 x 8 1/2 paperback 235 pages.
Cat. no. 510 $5.95

EXPERIMENTAL

Two volumes loaded with incredible science machines and projects! ...a pair of books Tom Edison probably would have enjoyed!



EXPERIMENTAL SCIENCE
by George M. Hopkins

Fantastic! There is no other way to describe this incredibly illustrated two-volume set from 1906. It is certainly worth having.

In the late 1800's when major new inventions like the electric light, telephone, and phonograph seemed to appear almost everyday, and when new scientific advances revolutionized everything from photography to medicine, "Scientific American" magazine was an important source of details.

A regular column written by Hopkins offered magazine readers a chance to build equipment and do their own experiments, and in effect, "get in on the action." Science wasn't something done exclusively in a laboratory, it was for everybody.

Starting about 1889, Hopkins began collecting these practical how-to columns from "Scientific American" and reprinting them, at first in just a single volume. By 1906 this 25th edition had so much material, it had to be split into two volumes. And what a pair of volumes they are!

You'll find some of the most fantastic wood engravings ever, illustrating experimental equipment of all types.

Volume One consists of nineteen chapters on rest, motion, force, gyroscopes, liquids, gases, sound, heat, light, polarized light, microscopy, photography, magnetism, frictional (static) electricity, dynamic electricity.

Build a gyroscope, Foucault's pendulum, a simple hydraulic press, a hydraulic ram, simple air pump, Geissler tube, a recorder for sound vibrations, device for production of sounding waves, a simple phonograph, centrifugal siren, and Norremberg Doubler. And these are just a few of the projects in only the first half of the first volume!

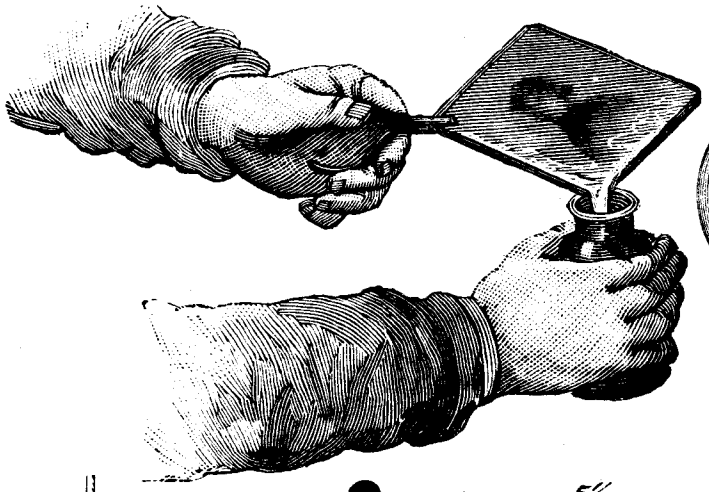
You can build a simple microscope and accessories, or a simple camera with plate holder, make Daguerreotype photos like those from the 1840's (dangerous), experiment with magnets, static electricity, build all kinds of batteries, a battery that converts heat directly into electricity, build bells, electromagnets, and even a 1/4 hp electric motor.

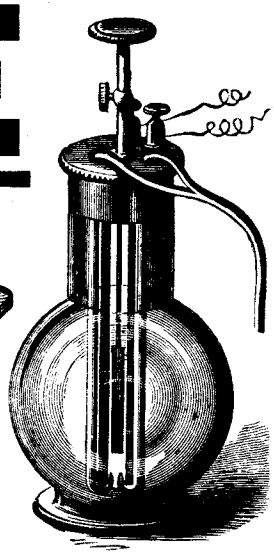
Volume Two will take you into more electricity by investigating AC electricity, arc lamps, high voltage induction coils, and Geissler tubes. You can build a telephone. Build a magic lantern and perform a variety of interesting projections.

You'll get practical how-to on blowing glass, making lenses, etching glass, making test tube racks and the like, making and using a crucible furnace, sand casting, making carbon rods and plates, and more.

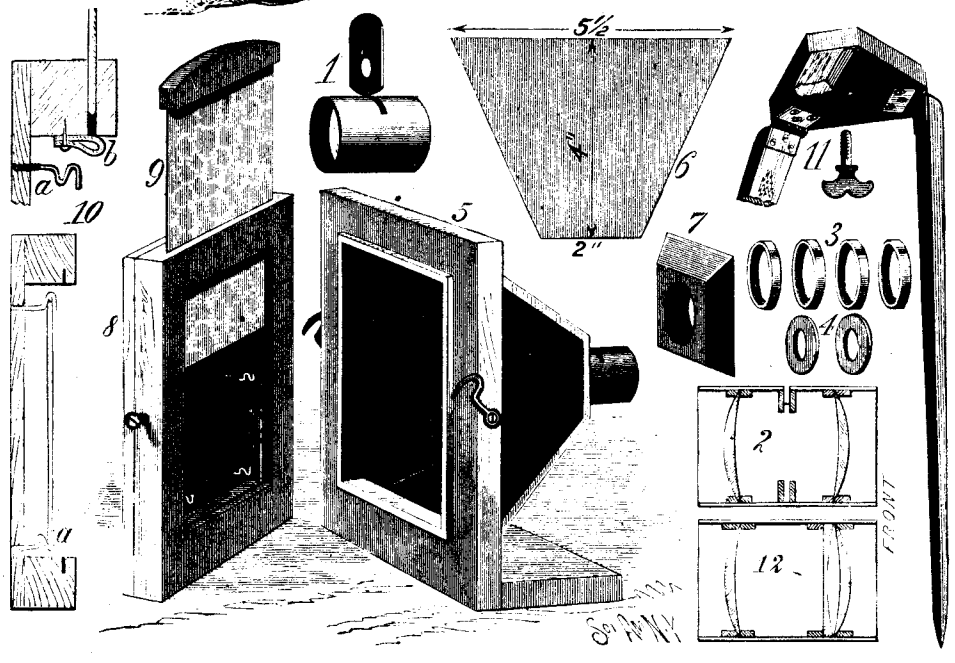
You'll be shown how to perform a variety of scientific parlor tricks that will amuse anyone who has never seen them. Discover scientific uses for the phonograph, build an opaque projector, and a simple acetylene gas generator. Try your hand at these super cold liquid air experiments, or new advances in photography including color photography, divining rods and metal detectors, long distance telephony, new wireless telegraphy, building an electric clock, high voltage experiments,

SCIENCE





Grenet Battery, with Air Tubes



even poly phase electricity!

If you haven't guessed by now, this is both an introduction to physics and simple directions for building strange mechanical test equipment that has been replaced by complex electronics these days.

The how-to you get is not overly detailed. You're expected to have some mechanical ability. You *WILL* get excellent illustrations that will show you almost everything you need to know. Any additional secrets are pointed out in the text.

This two volume set is the nuts for anyone who is looking for interesting models and equipment to build. If you want to build and run scientific equipment that hasn't even been seen in decades, you should have this. A kid who is really interested in building a unique science fair project will love it. Someone who loves old books and engravings will treasure it.

And just about anyone who loves machines will get hours and hours of enjoyable reading.

It's impossible to reveal the scope and beauty of these two books in the limited space this catalog provides. But take my word for it, these are fascinating books. Top quality. Expensive, but worth the price. Look them over carefully.

Over a thousand pages!

Wall-to-wall projects!

Incredible apparatus!

Great woodcut illustrations!

Complete 1906 edition!

Researcher's favorite

The existence of these books was pointed out to me several years ago by an avid experimenter who has built Tesla coils and Wimshurst machines, researched perpetual motion, free energy devices and all types of unorthodox subjects.

He found *Experimental Science* to be a very valuable reference, but because of its rarity, he hadn't been able to buy a set of his own. When I told him that I was going to take a chance on reprinting the two volume set, he jumped for joy. Now he can afford his own set. So can you.

We're confident you'll find *Experimental Science* as much fun and as useful as we have.

EXPERIMENTAL SCIENCE
Volume One
5 1/2 x 8 1/2 paperback 560 pages
Cat. no. 4490 $19.95

EXPERIMENTAL SCIENCE
Volume Two
5 1/2 x 8 1/2 paperback 532 pages
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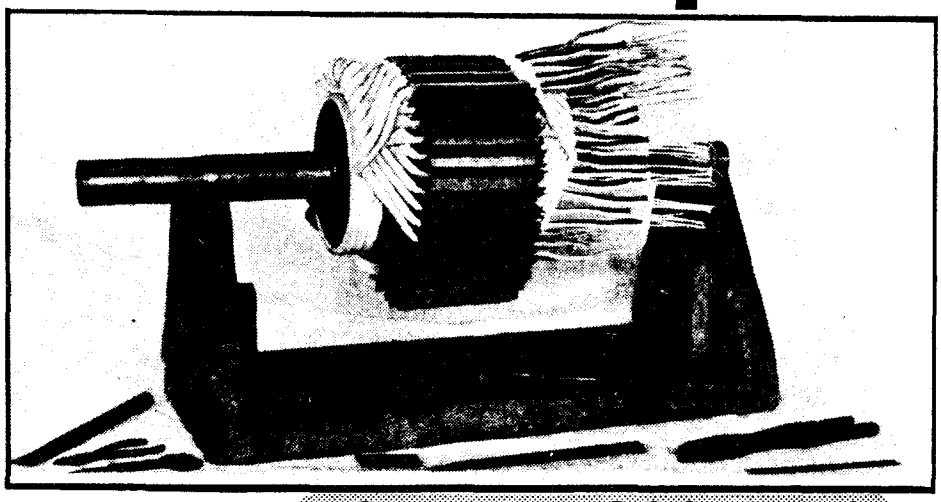
Both volumes in sewn hardcover bindings for libraries and collectors. Available in sets only. Relatively few hardcover volumes have been printed. Availability may be unpredictable.
Cat. no. 927 $48.95

Armature Winding and Motor Repair!

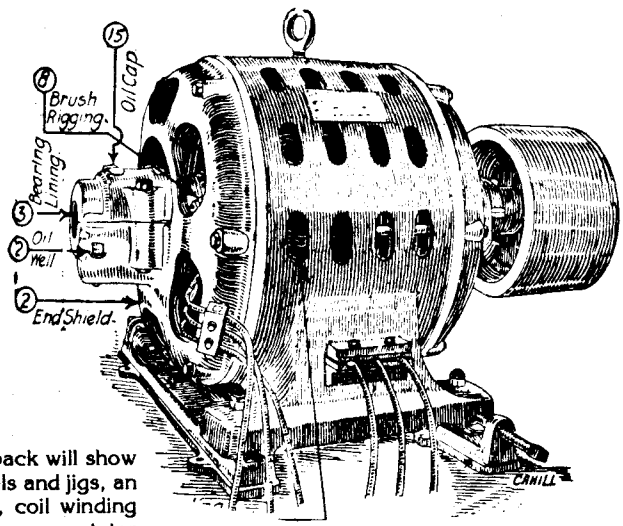


Classic 1920 Text!

ARMATURE WINDING AND MOTOR REPAIR
by Daniel H. Braymer

From 1920 comes this motor rewinding book loaded with drawings and photographs that will show you how to build both AC and DC machines.

Chapters include: DC machines, AC machines, shop methods of rewinding DC armatures, making commutator connections, testing DC armature windings, operations before and after winding DC armatures, insulating coils and slots for winding, shop methods for rewinding AC machines, testing induction motor windings for mistakes and faults, adapting DC motors to changed operating conditions, practical ways for reconnecting induction motors, commutator repairs, adjusting brushes and correcting brush troubles, inspection and repair of motor starters and generators, diagnosis of troubles, methods to solve special troubles, tables and more.



One special chapter at the back will show you how to build the special tools and jigs, an armature sling, a pinion puller, coil winding machine, a coil taping machine, commutator slotter, armature banding machine and more.

The motors described are large types used in factories. But the principles apply to the smaller motors you and I use. You'll learn how to reconnect induction motors for different voltages and phases, how to operate a DC motor as a generator and visa-versa, change the DC motor windings for different voltages, and more.

You'll be taught all the techniques from removing old windings and cleaning slots, to winding the coils, insulating the end connections, inserting the coils, painting the windings, relining split bearings, and much more. You get data on all types of wave and lap windings, varnishing and insulating materials, and much more.

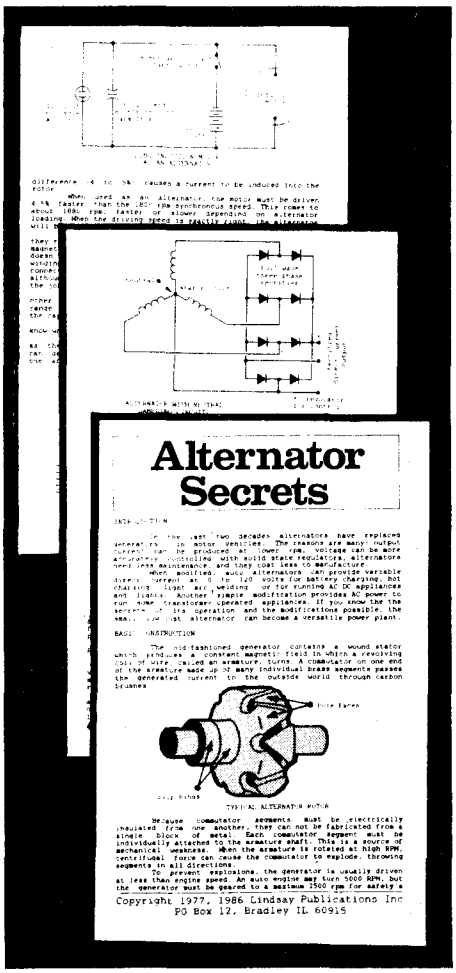
I make you no promises, but this is the logical place to start should you want to rewind a motor to particular voltage, wind a generator or alternator for use with a windmill or waterwheel, rewinding a big generator for use as a welder, modify a DC motor for use in an electric car, and so on.

This is a beautiful book. You get over 500 pages of clearly written, wall-to-wall practical how-to with excellent illustrations. This is as good as, and in most cases, is much better than, any motor book I've carried in the past,regardless of price. It's a gem that should be in the reference library of most "machine freaks" (that includes you, son). Order one as soon as you can. 5 1/2 x 8 1/2 paperback 540 pages

Cat. no. 4384 $16.95

Alternator Secrets!

Get surprising amounts of power from a common auto alternator!



ALTERNATOR SECRETS 2nd Ed

If you know the secrets of modification, you can get large amounts of power from a common auto alternator. You can build a portable powerplant driven by a gasoline engine to run brush-type power tools, lights, and AC-DC appliances at remote locations. You can hot-charge storage batteries, or even do light arc welding. Operation of the regulator is explained so that you can build a custom regulator, if needed, to provide regulated output voltages other than 12.

Learn how you can make almost an ordinary induction motor (like an old washing machine motor) put out 120 volts at 60 cycles without rewinding or internal rewiring. These secrets are worth the price of the booklet alone.

We've jammed a ton of information into 16 pages with small type to keep printing costs down so that we can keep the retail price the same as the old edition. Valuable, rare info! Get a copy. 5 1/2 x 8 1/2 booklet 16 pages

Cat. no. 80 $3.00

Build a Dynamo!

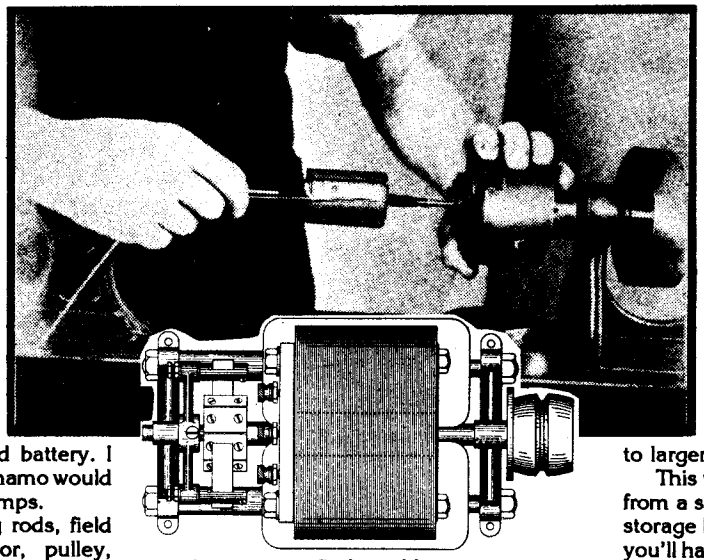
DYNAMO BUILDING FOR AMATEURS
by A. J. Weed
reprinted by Lindsay Publications

"A practical treatise showing the construction and winding of an experimental fifty watt dynamo. Illustrated by sixty-four original engravings showing the actual work in progress."

It's only a fifty-watt dynamo which is not a lot of power, but this book is worth having. Although the author doesn't specify DC output in amps and volts, he does say that when used as a motor, it will generate 1/12 hp when connected to a 5 cell battery which would be 11 volts for a lead-acid battery. I would imagine the output of the dynamo would be about 12 volts as just over 4 amps.

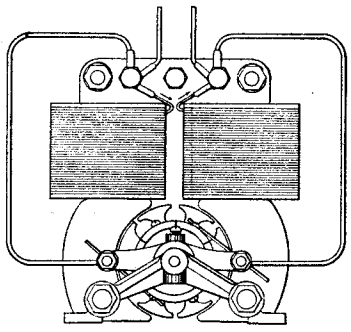
Chapters include: side-bearing rods, field punchings, bearings, commutator, pulley, brush holders, connection board, armature shaft, armature, armature winding, field winding, connecting and starting.

The project is based on field punchings that were available as a kit when the book was released in 1910. I would think that if you're at all



creative, you can find an old motor or generator and salvage field and armature punchings from it. Electrical steel is easy to get these days.

You can use this book as an intro into building generators and/or motors. You will be



shown everything from dimension drawings to winding procedures to turning the commutator in a lathe. Once you've built this, you can jump to larger machines.

This would be a great dynamo to be driven from a small steam engine. Use it to charge a storage battery out in the wilderness. I'm sure you'll have your own unique application. Interesting project. Rare information. By one of the authors of "Gas Engine Construction". Inexpensive. Get a copy! 5 1/2 x 8 1/2 paperback 86 pages photos & drawings
Cat. no. 4171 $5.95

Old Time Electrical Projects!

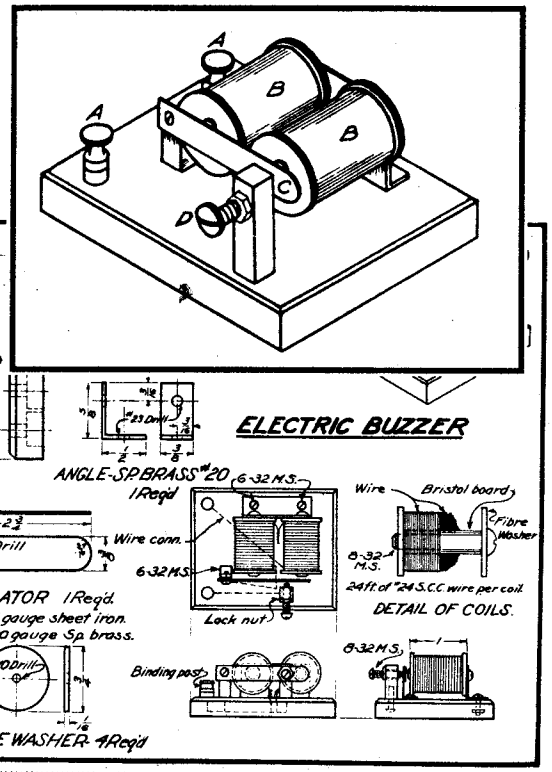
PRACTICAL PROBLEMS IN ELECTRICAL CONSTRUCTION
by Perry & Buck
reprinted by Lindsay Publications

From out of the year 1928 comes this small book of electrical projects. Like so many other books in this catalog, you'll find that projects are somewhat out of date but the information and construction techniques revealed are no longer taught. And although you might not want to exactly duplicate a project, you can certainly use the skills taught.

The projects include a medical coil (induction coil for quack medicine), buzzer, lamp, rheostat, sign flasher, electric toaster, two different electric heaters, soldering iron, crystal radio, 110 to low voltage transformer, Tungar rectifier, Duram one-tube regenerative receiver, and a four chapter series on building an electric motor.

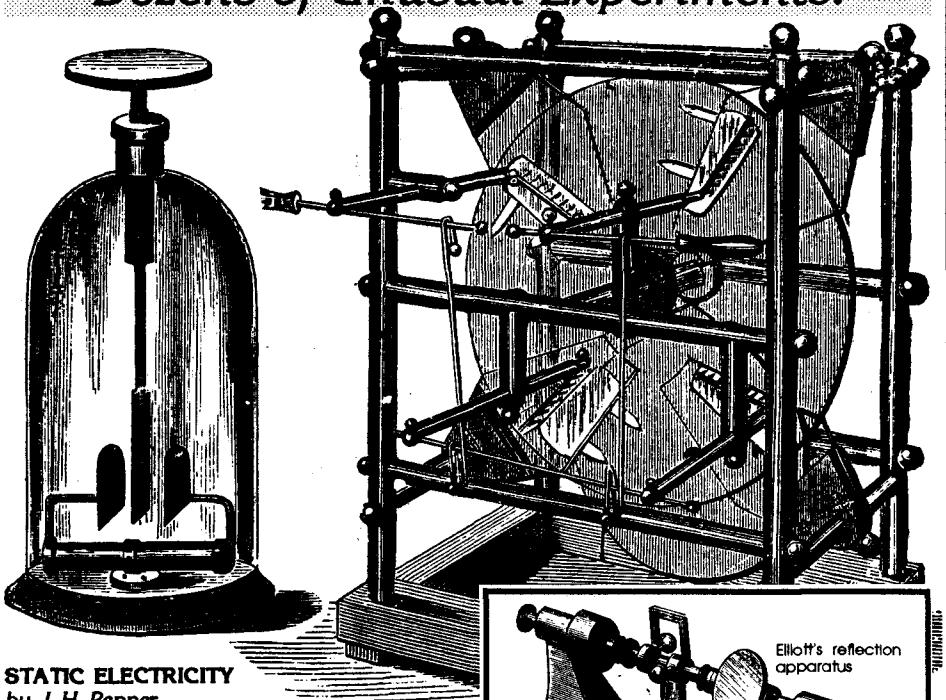
The biggest criticism I have is that the descriptions are too brief. You're expected to have some experience as a mechanic because these are more or less advanced projects. Great info on nichrome wire and its use in building electrical heating devices. An fascinating regen receiver, too. An interesting book with unusual projects. Low-cost. Get a copy. It's worth having.
5 1/2 x 8 1/2 paperback 72 pages
Cat. no. 4767 $4.50

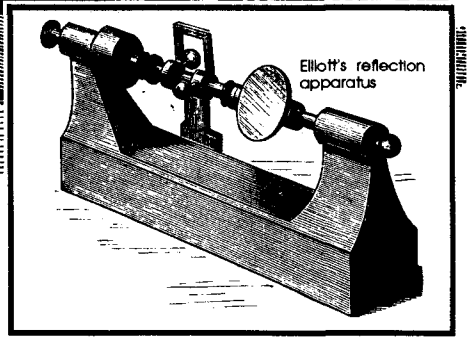
Build a toaster, soldering iron, radio...



STATIC ELECTRICITY!

Unusual High Voltage Equipment!
Dozens of Unusual Experiments!





Elliott's reflection apparatus

STATIC ELECTRICITY
by J. H. Pepper
reprinted by Lindsay Publications

Static electricity is a nuisance when you walk across a carpet and then watch a blue flame jump out from a doorknob to burn off the end of your finger. But this kind of electricity can also be fascinating.

Back in the 1880's when people knew little about current electricity, static or frictional electricity was a scientific curiousity in laboratories and parlours. Giant lightning generators were built by amateurs and educators and bizarre experiments performed.

From Pepper's "Cyclopaedic Science Simplified" we've reprinted the chapter entitled "Electricity, Frictional or Statical", one of the best textbook discussions we've found yet.

You get a detailed discussion of electroscopes, 17 electroscope experiments, Cavallo's Cylinder Electrical Machine, the Royal Polytechnic Great Plate machine, Winter's electrical machine, the Holtz machine, the Electric Well experiment, experiments in induction, charge storage techniques, lengthy discussion of Leyden jars, the Leyden battery, followed by another thirty experiments including Cuthbertson's Balance Electrometer, the electric bomb, Harris's thundercloud needle, and a couple of machines for generating high voltage with a steam jet! And there is much more.

Everyone seems to be building electronic devices with integrated circuits. No one seems to know about old time electricity. Here, in one volume are forgotten electrical devices, principles, and experiments. You'll find page after page of unusual information and illustrations.

There are a lot old science textbooks available in old bookstores for little money. But a really a good discussion of static electricity like this one is hard to find.

Although this is not really a cookbook for building equipment, the wood engravings are quite detailed, and the text describes the equipment thoroughly enough that you could probably build the devices without great trouble. This is a great source for unusual science fair projects.

If you like to explore old scientific principles, build unusual apparatus, or just impress your friends, consider a copy of this unusual book. I think you'll like it. 5 1/2 x 8 1/2 paperback 88 pages

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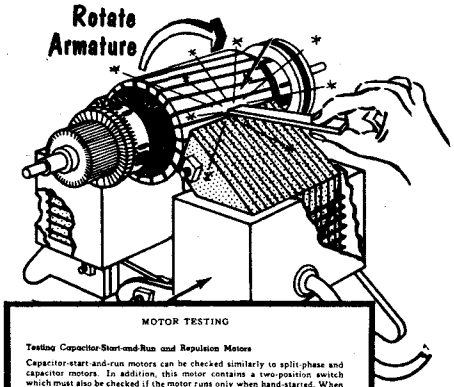
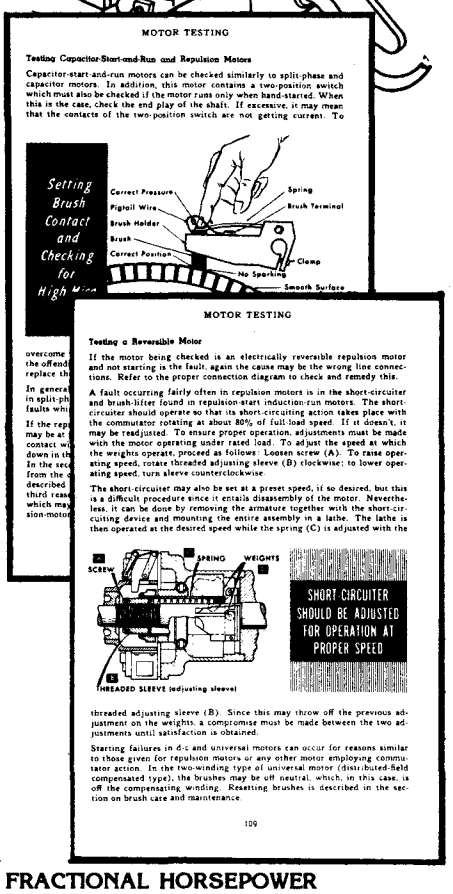
SMALL MOTORS & Their Repair





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ELECTRICAL DESIGNS!

34 Projects! From motors to Tesla Coils!

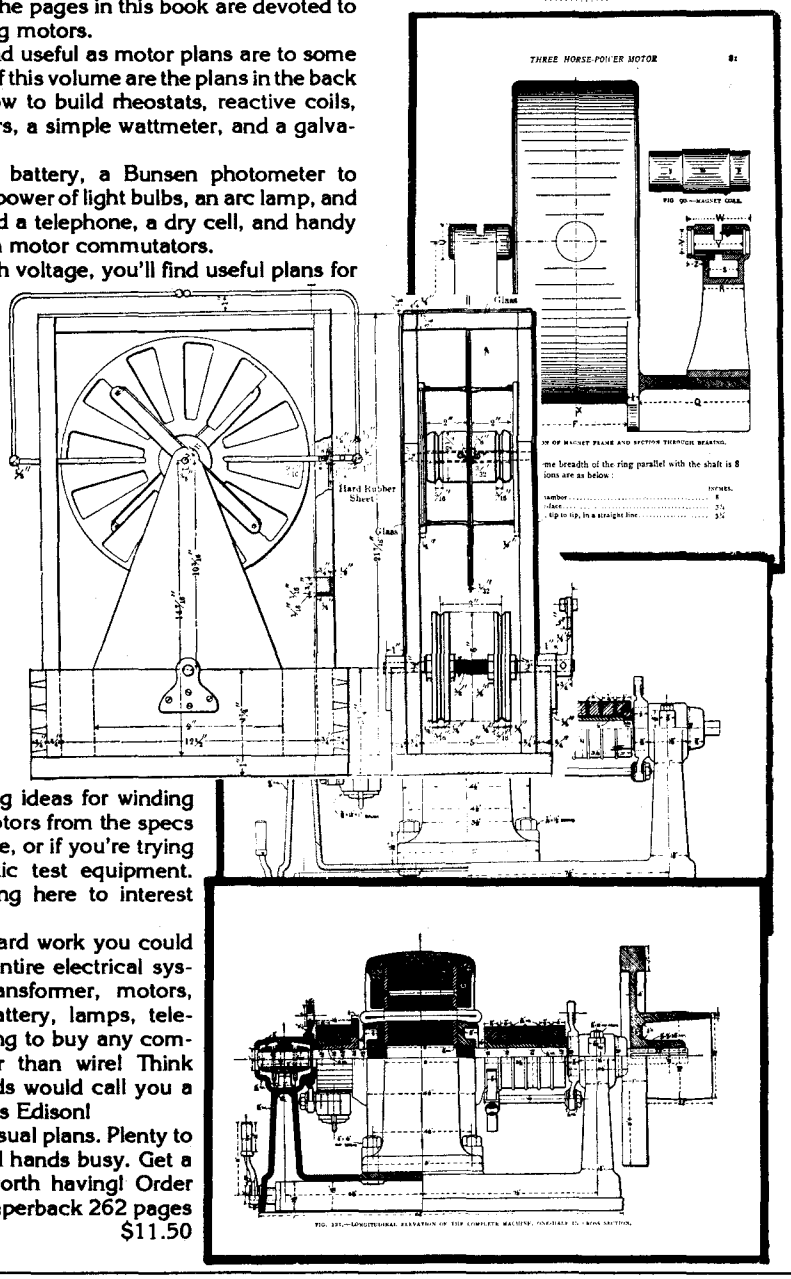
ELECTRICAL DESIGNS
Articles from American Electrician Magazine
reprinted by Lindsay Publications

By 1901 people were getting tired of shocking the cat. They realized that electricity was more than a novelty, and that it could be put to use doing heavy work. But electric motors were scarce and very expensive. It's no wonder that half of the pages in this book are devoted to building and winding motors.

As interesting and useful as motor plans are to some people, the beauty of this volume are the plans in the back half. You'll learn how to build rheostats, reactive coils, ammeters, volmeters, a simple wattmeter, and a galvanometer.

Build a storage battery, a Bunsen photometer to measure the candlepower of light bulbs, an arc lamp, and a Nernst lamp. Build a telephone, a dry cell, and handy tools for working on motor commutators.

If you're into high voltage, you'll find useful plans for an induction coil, a Tesla-Thompson coil, a high voltage condenser for use with Tesla coils, and a powerful Wimshurst machine.



Every article is illustrated, and most drawings are dimensioned. The text is brief and to the point, but it should provide more than enough information for you to complete the project.

It doesn't matter whether you're interested in collecting ideas for winding modern working motors from the specs and instructions here, or if you're trying to build early exotic test equipment. You'll find something here to interest you.

With plenty of hard work you could probably build an entire electrical system: alternator, transformer, motors, rectifier, storage battery, lamps, telephone without having to buy any commercial parts other than wire! Think about it. Your friends would call you a modern day Thomas Edison!

Great ideas. Unusual plans. Plenty to keep your mind and hands busy. Get a copy of this! It's worth having! Order today. 5 1/2 x 11 paperback 262 pages
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You Get Plans for:

- one-sixth horsepower motor with drum armature
- one-sixth horsepower motor with ring armature
- one-fourth horsepower motor with drum armature
- one-fourth horsepower motor with ring armature
- one-half horsepower motor with drum armature
- one horsepower bipolar motor with drum armature
- one horsepower four polar motor with drum armature
- two horsepower four polar motor with drum armature
- three horsepower motor with drum armature
- one kilowatt combined AC & DC machine
- two kilowatt combined AC & DC machine
- four kilowatt combined AC & DC machine
- single phase rectifier
- universal alternator for laboratory purposes
- one-quarter horsepower induction motor
- simple transformer in four sizes
- contruction of a reactive coil
- construction and calculation of rheostats
- simple voltmeters, ammeters, wattmeters
- d'Arsonval galvanometer
- sensitive mirror galvanometer
- Thomson Astatic Galvanometer
- cheap testing set
- construction and use of a photometer
- construction of a simple storage battery
- construction of a constant potential arc lamp
- an experimental Nernst lamp
- construction of an induction coil
- construction of a Tesla-Thomson high frequency coil
- condenser for extremely high potentials
- construction of a Wimshurst influence machine
- telephone transmitter and receiver
- construction of a dry battery cell
- some handy commutator tool

Procedures in Experimental

Procedures in
EXPERIMENTAL PHYSICS
by John Stong
reprinted by Lindsay Publications

If you consider yourself an experimenter, an inventor, or a builder of unusual machines and equipment, you must have a copy of this fantastic classic text. No two ways about it.

You'll find wall-to-wall practical how-to and incredible illustrations on almost every one of the more than 600 pages. Chapters include: laboratory glass blowing, laboratory optical work, technique of high vacuum, coating of surfaces by evaporation and sputtering, the use of fused silica, electrometers and electroscopes, geiger counters, vacuum thermopiles and the measurement of radiant energy, optics, photoelectric cells and amplifiers, photography in the lab, heat and high temperature, notes on the materials of research, notes on the construction and design of instruments and apparatus, and molding and casting.

This is some incredible stuff! Learn how to blow glass and make aspirators, distillation condensors, and so on. Learn how to seal copper to glass so that you can imbed electrodes. This could be handy for trying to make light bulbs, vacuum tubes, or x-ray tubes maybe.

Learn how to rough cut lens blanks from large plates of glass and then grind them into lenses on your homebuilt lens grinder. Learn how to make a parabolic telescope mirror using the standard techniques. Learn to make unusual equipment to test the finished mirror. Learn how to grind a Schmidt lens.

To create high vacuum you'll read about roughing pumps, the vapor pressure of waxes, getters for creating the highest vacuums, and learn to make a variety of diffusion pumps using mercury and oil. See charcoal traps, kinetic vacuum systems, vacuum gauges of all types. Remember, all this comes with construction details.

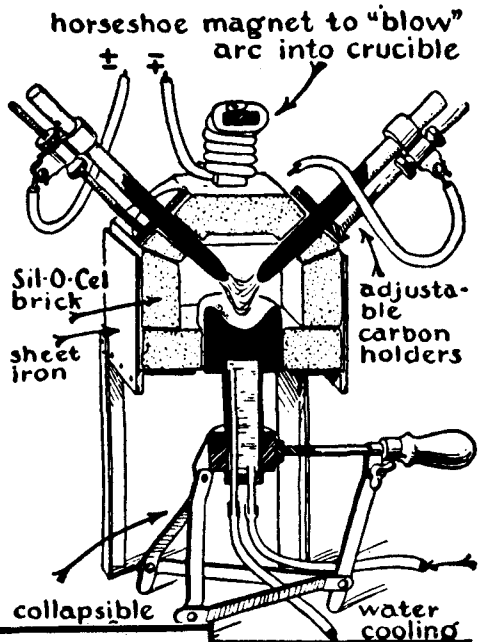
Learn how to silver mirrors with a variety of methods including vacuum sputtering. You'll find extensive details on the evaporation technique for aluminum.

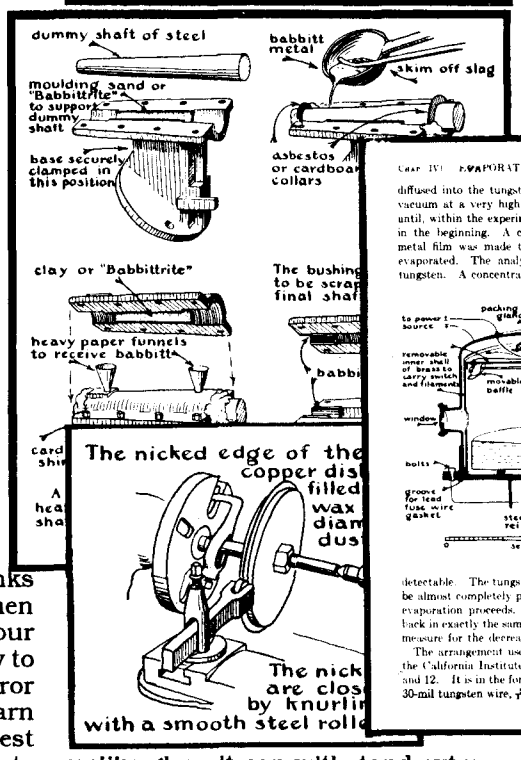
Fused quartz is valuable because unlike glass it can withstand extreme temperature changes without shattering. Learn how to build micromanipulors and all the rest of the equipment to produce tiny fibers that can be used for suspending the elements of an electrometer, for cross hairs in optical instruments, or for building a balance. The microbalance shown is supposed to be sensitive down to a billionth of a gram per division!

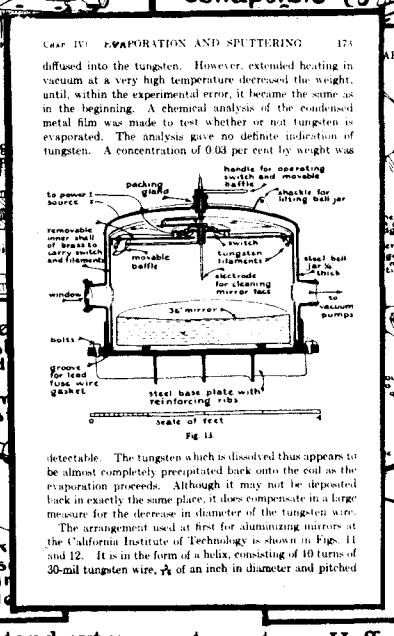
And there's so much more! Build a Comption adjustable quadrant electrometer, a Hoffman electrometer, and others useful for x-ray and cosmic ray work. Build a Geiger counter. You can build your own Geiger-Mueller tube if you master the high-vacuum technique taught earlier. Unfortunately, most of the electronics described is based on vacuum tubes of fifty years ago rather than on transistors.

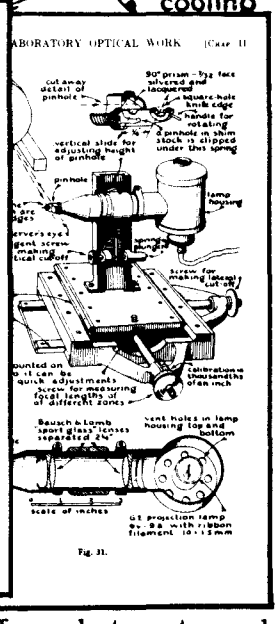
Build vacuum thermopiles that measure infrared, visible light and ultra-violet so accurately that they can be used to calibrate photographic lightme-

Incredible laboratory processes revealed!

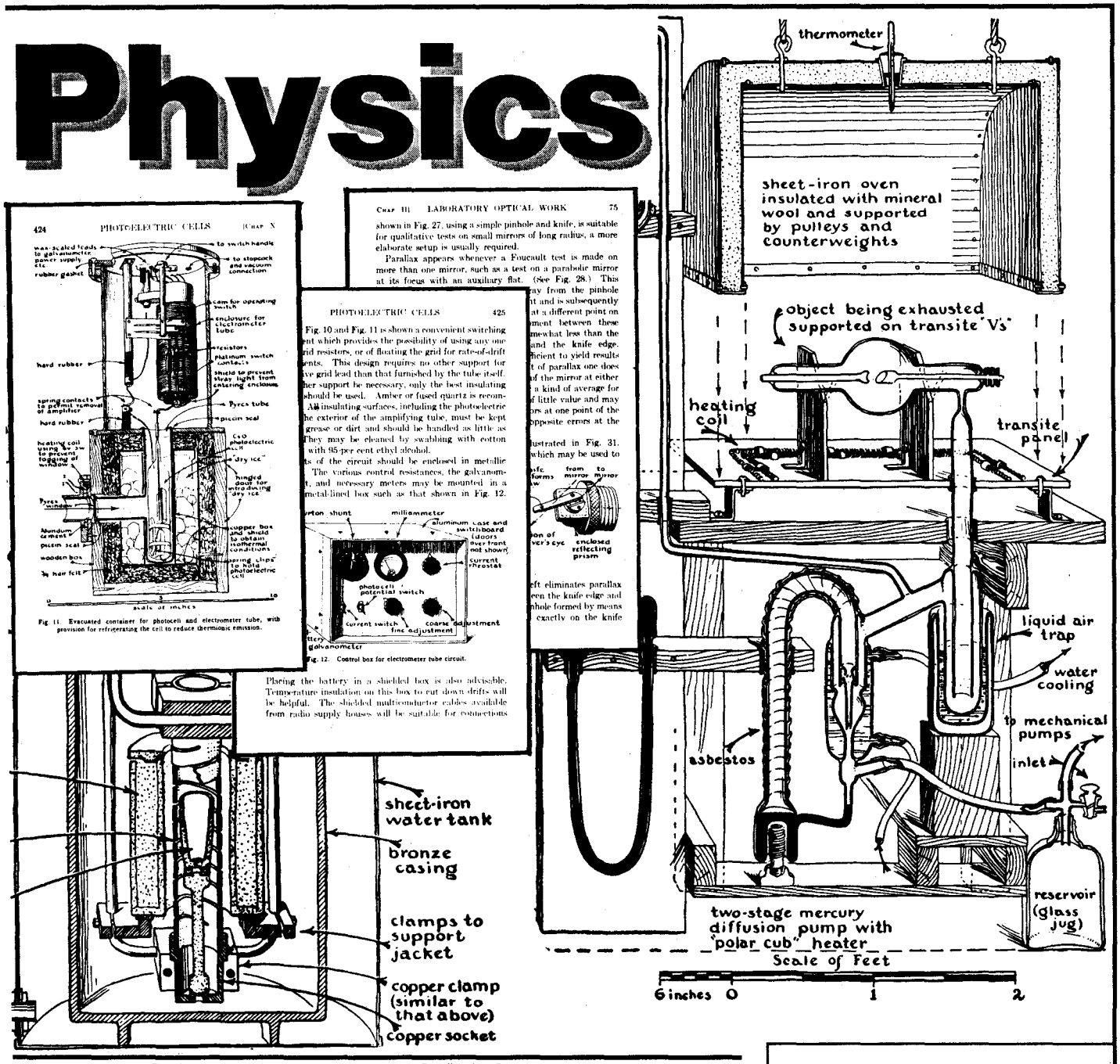








Physics



424 PHOTOELECTRIC CELLS [CHAP. X

Fig. 11. Evacuated container for photocell and electrometer tube, with provision for refrigerating the cell to reduce thermionic emission.

CHAP. III LABORATORY OPTICAL WORK 75

shown in Fig. 27, using a simple pinhole and knife, is suitable for qualitative tests on small mirrors of long radius, a more elaborate setup is usually required.

Parallax appears whenever a Foucault test is made on more than one mirror, such as a test on a parabolic mirror at its focus with an auxiliary flat. (See Fig. 28.) This ray from the pinhole ...nt and is subsequently ...at a different point on ...ment between these ...mewhat less than the ...and the knife edge. ...ficient to yield results ...t of parallax one does ...of the mirror at either ...a kind of average for ...f little value and may ...ors at one point of the ...opposite errors at the ...

...lustrated in Fig. 31, ...which may be used to ...

...eft eliminates parallax ...een the knife edge and ...hole formed by means ...exactly on the knife

PHOTOELECTRIC CELLS 425

Fig. 10 and Fig. 11 is shown a convenient switching ...nt which provides the possibility of using any one ...rid resistors, or of floating the grid for rate-of-drift ...ents. This design requires no other support for ...ve grid lead than that furnished by the tube itself. ...her support be necessary, only the best insulating ...should be used. Amber or fused quartz is recom... All insulating surfaces, including the photoelectric ...he exterior of the amplifying tube, must be kept ...grease or dirt and should be handled as little as ...They may be cleaned by swabbing with cotton ...with 95-per-cent ethyl alcohol.

...s of the circuit should be enclosed in metallic ... The various control resistances, the galvanom..., and necessary meters may be mounted in a ...metal-lined box such as that shown in Fig. 12.

Fig. 12. Control box for electrometer tube circuit.

Placing the battery in a shielded box is also advisable. Temperature insulation on this box to cut down drifts will be helpful. The shielded multiconductor cables available from radio supply houses will be suitable for connections

Wall to wall how-to!

ters and such. You've heard of carbon arc lights, but do you know how to build *iron* arc lights? Or low pressure mercury arc lights? And others? You can even build a machine to measure the wavelength of colored light.

You'll find details on hydrogen furnaces, crucibles, burners, electric arc furnaces, and even a lab setup for making artificial rubies and sapphires! And there's much more - even down to what we consider the "easy stuff" like using a lathe and sand casting.

You should see by now that this is a fantastic book loaded with construction secrets for unusual equipment. And you should now understand how a book first published in 1938 went through a couple of dozen printings! It's a classic. It's incredible. You should have a copy for reference if nothing else. Highly recommended. Order a copy today.

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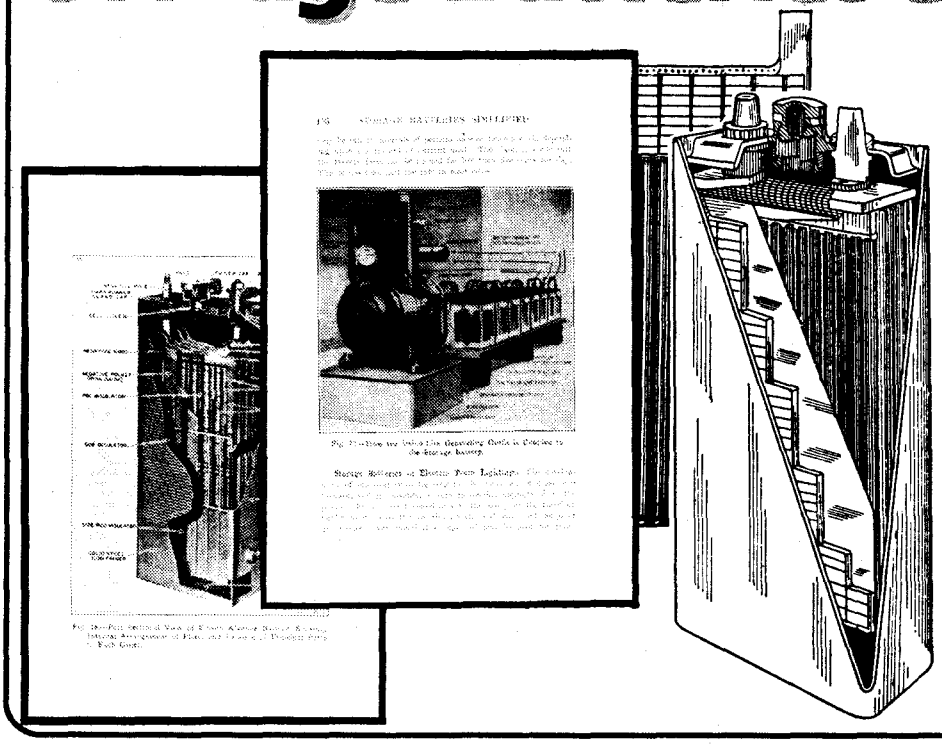

STORAGE BATTERIES SIMPLIFIED
by Victor Page
reprinted by Lindsay Publications

It's old, 1917 to be exact, but it's damed good. Modern storage batteries have plastic cases and plate separators, but in operation, performance, and maintenance batteries really haven't changed too much since this book was first published.

Five chapters cover simple lead plate batteries, Plante plates, pasted plates, Edison batteries, details of plate construction, Gould plates, Exide plates, separator function and more. One whole chapter deals with battery defects, how to make electrolyte, dismantling and repairing batteries. You get full details on how to charge batteries, plus a chapter on their use covering auto starting and lighting, electric autos, railroad use, street cars, mines and even WWI submarines!

I don't think the battery repair instructions will be very useful with modern batteries, and I wouldn't even try to build some of the battery chargers described. Neverthless, there is so much excellent material here that I give it high marks. Loaded with photographs, drawings and charts. 5 1/2 x 8 1/2 paperback 220 pages
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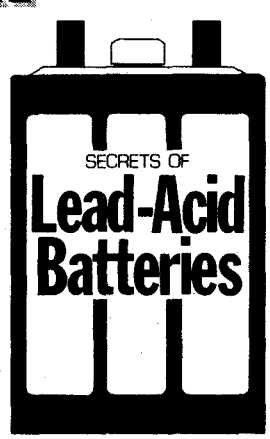

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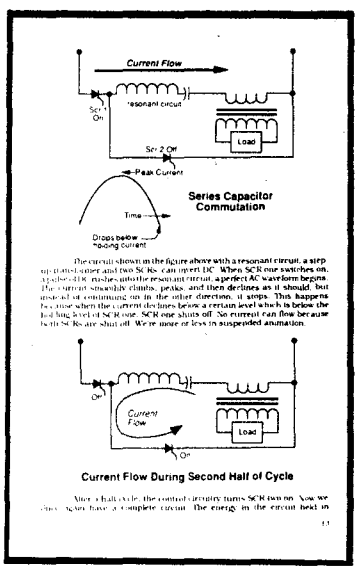

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